

GP-592 REVISION 32 OCTOBER 4 1974

Is the earlier version in then of pet PRA.

LAUNCH VEHICLE CATALOG OF TESTS AND OPERATIONS



Prepared For

LAUNCH VEHICLE OPERATIONS

Prepared By
THE BOEING COMPANY
ATLANTIC TEST CENTER
SATURN — LAUNCH OPERATIONS

CHANGE LOG

CHANGES TO THE ORIGINAL DOCUMENT ARE LISTED BELOW:

REVISION				ISSUE DATE	- 15 55 7 60°
19	COMPLETE RI	EVISION		01/05/72	AT3-1-55590 B
20	PARTIAL RI	EVISION			ATS-16552
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TEST CATALOG			СНА			
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V-20083	TBC	Χ	and the second s			
V-20084			Х			•
V-20085		X				
V-20086		Χ				
V-20100			Х			
V-20101			X			
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V-20103			Х			
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V-20109			Х		*	
V-20110			X			
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V-20114			Х			
V-20115			X			
V-20116			X			
V-20117			X		and the second	
V-20118	TBC		X			

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V-20119	TBC		χ				
V-20120			X				
V-20126			Χ				
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V-20130			X			· ·	
V-20131			X				:
V-20132			χ				:
V-20133	TBC		Χ			·	
V-21223	IBM		X				
V-21255			X				
V-21478			Х				
V-21479			` X				
V-21497	IBM		Х				
V-21536	MDC		X				
V-21537	MDC		. X				
V-21564	IBM		X				
V-21574	IBM		Χ				
V-21583	CCSD	X					
V-21584	CCSD	X					page
V-23030	IBM		Χ				<
V-23155	IBM		X				

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SHEET	CONTRACTOR	NEW	REVISED	CANCELLED	DELETED	NOTES	
V-23198	IBM		X				
V-23221			Χ				
V-23222	A STATE OF S		X				
V-23223			X				<u>na ana mandana na mpada na manana di Andria Main den a</u>
V-23225			Χ				
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V-23260	CCSD		X				
V-23261			Χ				
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V-23263			X		and the state of t		nega mengge phisis sillist galegorias iban galegorias en en en en
V-23264		-	X				
V-23266			. X				
V-23 267			X			en e	
V-23268			`X	:			
V-23269			. X				
V-23275			X				
V-23276	CCSD	İ	Χ				
V-23279	IBM	111.00	X	. cou orași dinastă			
V-23280	1		X		mmig valor elektric		**************************************
V-23281			X				
V-23282			Χ	les constitues a per la constitue	3144	s pre	
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V-24228	IBM		Χ				

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	IBM					
V-24298	1		Х			
V-24299			X			
V-24391			Х			
V-24407		ana maga an ing malatan ng ni Migilita ka na kalapa C.O ng agam masa ni sasana ka ka maga Palaba Nasan G.Pera	Х			
V-24408		nacourte (Carolina) (C	Х			
V-24422			Х			
V-24435			X			3
V-24437		·	Х			1111
V-24443			Х			
V-24445	IBM		Χ			
V-24497	CCSD		X			
V-24499	CCSD		Χ			
V-24522	CCSD		X		e de la companya de l	week and the second of the sec
V-24527	CCSD		Х		1 A 1 A 1	a de la companya de
V-24537	MDC		Х			·
V-24561	IBM	Χ				
V-24579	j dang d CCSD selakat	wala X ha				
V-26491	IBM		Χ			
V-26492	IBM		Χ			
/- V-26497	IBM		Х		de al de	page
V-26533	CCSD	et grane a set y		Х		V111
V-26547	IBM		X			=

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SHEET	CONTRACTOR	NEW	REVISED	CANCELLED	DELETED	NOTES
V-26548	IBM		X			
V-26549	IBM		Χ			
V-26683	IBM		X			
V-27250	MDC	-	Χ			
V-28003	NASA			Х		
V-28004				_ X		
V-28005			Χ			
V-28008				X		
V-28009	NASA			X		
V-28054	IBM		Χ			
V-28055	IBM		Χ			/
V-28056	IBM		Χ		-	
V-28070	NASA		Χ			
V-28150	NASA		\$	X		
V-28184	NASA	·		Х		
V-28203	CCSD		Χ			
V-28205	CCSD		Χ	1.		
V-28218	CCSD A.A.		Χ	w was a second	24 24	
V-28223	CCSD		Χ			
V-28232	IBM		Χ			
V-28233	IBM		Χ	to the second of the second		Dod a
V-30050	TBC	(Aruberia)		Х		
V-30053	TBC				X	CANCELLED IN REV 31

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V-30054	Tı	BC				Х	CANCELLED IN REV 31			
V-30056						X		-		
V-30068						Χ				
V-30080						Χ				
V-30086					ì.	Χ	* * * * * * * * * * * * * * * * * * * *			
V-30089						Χ				
V-30099						Χ				
V-30104		3				Х				
V-30113						Х	CANCELLED IN REV 31			
V-30115					Х			The second secon		
V-30116						Χ	CANCELLED IN REV 3]			
V-30125						Х	CANCELLED IN REV 31			
V-30128						χ	CANCELLED IN REV 31			
V-30148					Х					
V-30149					X					
V-30166					X					
V-30169				· · · · · · · · · · · · · · · · · · ·		X	CANCELLED IN REV 31	400		
V-30187	1.23.29.18	A. A.	1 80.44 94		1	, X				
V-30199						χ				
V-30204				1		Х				
V-30222						Χ		page		
V-30226						Χ		×		
V-30260	T	BC				χ	CANCELLED IN REV 31			

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V-30274	ТВС	managani distribut diken di uru tutur sistema atau tiku di sasah ki serenti atau kan di sasah ki serenti atau s	nakas pilaten kanan kalanda kanan salah br>-	Х			mayor diagnos
V-30313					X.,	CANCELLED IN REV 31	
V-30337			美雄的人们,我们就是一个人们的,他们们们们们们们们们们们们们们们们们们们们们们们们们们们们们们们们们们们		χ	CANCELLED IN REV 31	anna anna
V-30340					X	CANCELLED IN REV 37	an in the second
V-30361				X			
V-30366			ministra en asser control ser de montaco en escala filo en escala en en en en en en en el de filo en en constru	and the state of t	X	CANCELLED IN REV 31	*****
V-30376			nerii aarkeetii siita kasta kast	and the second s	Х		
V-30384			na y www.n.e. mod mod Plant y article destroyer (Plant in 2000 a.m. and y got accessors in the same		X		
V-30389		The second section of the second section of the second section section section section section section section			X		
V-30391			usanu uran kutakan sa keriman Minuser muni usan jalagan apat, a njagan megabah sa ungan		X		
V-30405					X		
V-30413			Maris Militar de un contro mentra (1904 de un 1904 de u L		X	CANCELLED IN REV 31	
V-30419				X		77117 Canada ta ta 17 118 (\L 1 \ \ 1	
V-30437			The second secon		X	CANCELLED IN REV 31	
V-30445					X	CANCELLED IN REV 31	-
V-30452				χ		OURSELD THE INTER OF	
V-30456			·		Χ.	CANCELLED IN REV 31	
V-30465					X		
V-30488							******
V-30500					X		T
V-30511					X		2627
V-30523				seriju ju je je je je	San y X Market		
V-30537	TBC	WWW Clark			*	CANCELLED IN REV 31	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \

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V-30538	TBC	and a service desirable specific management of the control of the			X	CANCELLED IN REV 31
V-31011	IBM		Χ			
V-31108	IBM		Χ			
V-31133	CCSD		X		:	444614
V-33038	CCSD		Χ	-		<u> </u>
V-33039	CCSD	Consideration of the control of the	Χ			Associated and the second
V-34017	IBM		Х			
V-34046	IBM		Х			
V-34047	IBM		Χ			
V-34053	CCSD		Χ	·		
V-36038	IBM		Χ			
V-36046	IBM		Χ			
V-36112	TBC				χ	CANCELLED IN REV 27
V-38010	CCSD		X			Secretaria de la Companya de la Comp
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V-20004	E	8/9/71
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V-20066	F:	5/23/72
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V-20070	i di di kacamatan ji di kacamatan kacamatan kacamatan kacamatan kacamatan kacamatan kacamatan kacamatan kacama	8/3/73
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V-20084	A	10/4/74
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V-21008		H	
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V-21010 D 1/5	3/72	Н	
V-21012		H	
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V-21014	172	H	
V-21015 D 1/8	3/72	H	
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	V-21103		11/5/70	
	V-21105	8	3/2/72	#
	V-21107	Ç.	7/24/72	•
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	V-21152	D	1/5/72	
	V-21153	A	1/5/72	•
	V-21158	C	1/5/72	
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	V-25340 B		Н
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V-26501		9/17/70	89
V-26502		9/17/70	909
V-26503		9/17/70	40
V-26504		9/17/70	19
V-26505		9/17/70	
V-26506	A	7/84/72	
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		1/21/71	
V-26508	Α		Н
V-56200	A	5/23/72	9
V-26510	A	5/23/72	Н
V-26511	A	8/9/71	H
V-26512	The state of the s	3/25/71	
V-26513	A	8/9/71	5
V-26514	A	3/5/72	10
V-26515	C	7/24/72	Н
V-26516	A	7/84/72	H.
V-26517	В	9/23/72	· 97
V-26519	B	3/2/72	W
V-26520	C	8/9/71	69
V-26521	C	8/9/71	mi -
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V-26524	8	8/9/71	Н
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V=26526	Ċ	5/23/72	49
V-26527		1/8/72	Н
V-26528	8	3/16/73	65
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V-26556	A A		7/24/72 H
V=26557			1/5/72 -
V-26550			1/6/72 -
V-26559	A		1/5/72
V=26560			1/5/72
V-26561	8		2/9/73
V=26962			1/8/72
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V-26570	A A		7/84/72 -
V=86571	A A A		7/24/72 -
V-26372	A		7/84/72 -
V-26573	A		7/84/72
V=26574	A :		1/1/73 H
V-26875			1/8/72 H
V-26977	Λ.		7/84/72 =
V-26576	A		7/84/72
V-26579	Ä		3/2/72 H
V-26580	Ä		3/2/72 H
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V-26562	and the second second second		3/8/72 H
V-26563			1/5/72
V-26584			2/0/72
V-2658B		4	3/6/72 -
V-26586	· A.		3/2/72 H
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V-26588	A		7/84/72 H
V-26509	A		7/84/72 =
V=20000	A		7/84/72
V-26598			1/0/72 H
V-26592			1/5/72 H
V-26998			1/5/72
V=26504			1/5/72
V-26595	A		7/84/72
V-26508	A		6/8/73 H
A-59886			0/8/73 H
V-86600	0		12/10/73 H
V=0660\$			3/11/72 H
A-50908	A		1./1./93 H
V-86605			3/8/72 H
A-50002	A		6/2/73 H
V-86606	A		5/23/72 H
V=26608			5/23/72
V=26609	A		6/8/73 H
V-26612	R2		5/23/72
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V-26615				5/23/72	H	
A-89979				5/23/72	Н	
V-26617		A		8/3/73	: 439	
V-26618				5/23/72	H	
A-59950				5/23/72	H	
A-59955				7/84/72	6	
A=59954		A		12/10/73	\$10	
V-26625				2/9/73	Н	
V-26627				2/9/73	H	
V-26628				2/9/73	. · ₩	
A-59958		A		6/8/73	Н	
V-26630				6/8/73	Н	
A-50037				6/1/73	Н	
A-50935	16. Dása			6/1/73	Н	
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V-26633				6/1/73	H	
V-26634				6/1/73	Н	
V-26635				6/1/73	Н	
V-26636				6/8/73	Н	
V-20637				6/1/73	H	
V-86638				6/8/93	H	
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V-26641				6/1/73	49 ·	
V-26642				6/1/73		
V-26643				6/8/73	H	
V-26644				6/8/73	H	
V=26645				6/8/73	Н	
V-26646				6/8/73	H	
V-26647				6/8/73	. Н	
V-26640				6/8/73	Н	
A-50049		Δ		12/10/73	Н	
V-26650				6/8/73	Н	
V-26691				6/8/73	Н	
V=86658				6/1/73		
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		A		12/10/73	H	
A-59924			· · · · · · · · · · · · · · · · · · ·	6/8/73	H	
V=26659				6/8/73	Н	
A-50020				6/8/73	H	
V-26657				6/1/73	H	
V=26658				6/8/73	H	
V-86659				6/8/73	H	
A=86990		***		6/1/73	Н	
V=26661		A		12/10/73	H	
A=\$0005				6/1/73	H	
V=26663				6/1/73	H	
V-26664				6/1/73	H	
V-26665				6/8/73	H	
V=26666				6/8/73	H	
V-26667				6/8/73	Н	
V=26668				6/1/73	Н	
A=50008				6/\$/73	H	
V-26670				6/1/73	H	

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V=2667		6/\$/73 H
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V-2667		6/8/73 H
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V-8667		8/3/73
V-2660		6/8/74 H
V=2668		6/3/74 H
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V-2702		8/12/69 = 7/84/72 =
V-2702		8/12/69
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V-2703		9/87/70
V-2703		9/17/70
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V-2703		9/57/70
V-2703		9/17/70
V-2703		9/\$7/70
V=2703		9/17/70 -
V-8704		3/86/73 -
V-2706		9/17/70 -
V=2705		3/16/73 -
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V-2706		3/16/73
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V-2706		3/86/73
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V=2707		12/10/73
V=2707 V=2708		7/84/72
V-2709		3/2/72
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V-2709		3/85/71
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V-27110		A		8/82/69	cia .
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V-27138		8		9/17/70	-
V-27139		6		7/84/72	57
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V-27143		9		8/9/71	
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V-27149		E		3/25/71	199
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V-27204		Ä			.,11
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V-27206				1/8/72	gui
V-27200		A		3/2/72	199
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V-27211	A the	A contract of		9/17/70	ve
V-27212		A		9/17/70	1997
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	V=27224	A CAMPAGE	3/25/71	99	
	V-27225	A A	5/23/72	9	
	V-27226		9/17/70	•	
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	V-27220	Control of the Contro	11/5/70	99	
	V-27229		8/9/71	12	- 1
	V-27230	8	3/16/73	199 :	-
	V=27238		8/9/71	9	
	V-27252	And Andrews	1/1/73	(2)	
	V-27233	8	10/5/72	9	
	V-27234		1/5/72	8	
	Ve27235		1/5/72	. 199	
	V-27236	and the second of the second o	12/10/73		
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	V-87240		1/5/72	(11)	
			1/5/72	**	
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V-29065	8	7/24/72	H

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V-29113 E		3.4
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V=30049		H
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V-30097	A		Н
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V-30132			Н .
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	30547			Н
	30548			H
	30550			H
	30552			H
V ==	30553			Н
V	30557		3/10/69	H
	30558		3/10/69	H
	30560	9	9/17/70	-
	30563	8	8/12/69	59
	30564	e e	3/2/72	
	30565		6/20/69	H
W _	30569		8/40/40	
		A	8/12/69	
	30571	A	1/5/72	49
	30572		6/17/70	H
V	30573		6/17/70	
V	30574		11/5/70	
	30575	8	3/25/71	H
	30576	9	1/5/72	H
	30577		1/81/71	H
	30578		1/5/72	19
Vm	30579		1/5/72	H
	30590	D		

že.

PAGE TEST NO VEHICLE

GP=592 SA V/18

dani

W-70507		7 (8 (70	
 V=30593 V=30594		3/2/72	Н
V-30602		5/23/72 5/23/72	
V-30603		5/23/72	
V-30604		5/83/72	
V-30605		5/83/72	107
V-30606	A A	8/8/73	
V-30607		5/83/72	
V-30608		5/83/72	
V-30609		5/23/72	
V-30610	D	6/8/74	H
V-30611		1/1/73	н
V-30613		2/9/73	Н
V-31011	E	10/4/74	
V-31012	G	5/23/72	
V-31015		11/5/70	
V-31025	B	8/9/71	н
V-31026	en la la companya de	8/9/71	H
V-31028	C	3/8/72	H
V-31031	A	1/1/73	
V-31032	C	1/5/72	10
V-31042	C	3/85/71	9
V-31045	D	1/5/72	99 ·
V-31046	D 8 D	6/17/70	
V-31047	D	1/5/72	
V-31048			ter :
V-31049			m
V=31052	D	2/9/73	H
V-31056	C	8/9/71	9
V-31057	<u>A</u>	1/5/72	e
V-31062	<u>C</u>	9/17/70	H
V-31063	D	2/9/73	
V-31064		6/17/70	₽
V=31065		6/17/70	(m)
V-31066		6/17/70	
V-31067	A	3/25/71	=
V-31108	D	10/4/74	
V-31109		1/5/72	7
V=31110		1/5/72	Н
V-31112	D	12/10/73	Н
V-31114		1/1/73	
V-31115	A A		
V-31116 V-31117	A D	7/24/72	
V-31118	8	6/1/73	H
V-31119		5/23/72	Ä
V-31120		3/8/72	er er
V-31121		9/23/72	
V-31122		5/83/72	,,,
V-31123		5/83/72	#
V-31124		5/23/72	
V-31125	A A	1/1/73	10
V-31126		5/23/72	est .

PAGE TEST NO. VEHICLE

	V=31127		7/24/72	
	V=31129	В	2/9/73	69 ·
	V-31130		10/5/72	
	V-31131		10/5/72	
	V-31133	A	2/9/73	100
	V-31134		10/5/72	
	V=31135		10/5/72	
	V-31138	Α	3/16/73	
	V-32000	A	3/2/72	99
	V-32001	C	3/16/73	Н
	V=32045		10/5/72	w.
	V-33011	G	5/23/72	100
	V-33013	F	8/8/73	99
	V-33021	H	2/9/73	
	V=33029	C	11/26/69	13
	V=33030	6	1/5/72	
	V-33032	D	10/5/72	
	V=33033	D	10/5/72	Mr.
	V-33034	D	5/23/72	et·
	V-33035	A	7/24/72	99
	V=33036	A S	7/24/72	99 -
	V-33037	A	7/24/72	99 *
	V-33053			9.
	V-33055 (CANCEL)	A	6/3/74	.
	V-34008	E	9/17/70	H
	V-34010	C	3/2/72	
	V-34011	C	3/2/72	99 1
	V-34012			H
	V-34013	8	6/17/70	ret
	V-34014	K	2/9/73	Н
. 44	V-34015			
	V-34016	C	1/5/72	H
	V-34017	E	10/4/74	***
	V-34030	C	1/5/72	Н
	V-34041	E	1/5/72	
	V-34044	A	3/2/72	***
	V-34045	C	5/23/72	
	V-34046	F	10/4/74	н
	V-34047	Į	10/4/74	
	V-34048	В	3/25/71	—————————————————————————————————————
	V=34050	A	5/23/72	
	V-34051	A	5/23/72	17
	V-34052	B	7/24/72	Н
	V=34053		10/4/74	600
	V-34054	A	5/23/72	19
	V-34055	A	5/23/72	91:
	V-34056		5/23/72	9
	V=35002	8		9
	V-35003	В	\$2.3.3.4.4.	HE
	V-35004	В	· · · · · · · · · · · · · · · · · · ·	•
	V-35015	D	8/3/73	Н
	V-35017	The state of the s	6/17/70	**
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PAGE TEST NO VEHICLE

	V≈35019		9/17/70	· · · · · · · · · · · · · · · · · · ·
	V-35020	<u>.</u>	6/1/73	
	V-36000			
	V-36001	6 - 1	1/8/72	H
	V-36003	D	8/82/69	Н
	V-36004		4/15/69	H
	V-36011			
	V-36014			
	V-36015			
	V=36023 V=36025		3/10/69	
	V=36026	8	1/5/72	
	V-36028	, and the second second		
	V=36029	Ĉ		Ä
	V-36030		7/24/72	
	V=36031		1/5/72	
	V=36032	A	1/5/72	⊕
	V-36033			H
	V-36034			H
144	V=36035			Н
	V=36036			Н
	V-36037			Harris Harris
	V-36038 V-36039	G C	10/4/74 1/5/72	ė
	V-36040	G C B	3/10/69	H
	V-36042	₩		H
	V-36043	6	10/5/72	
	V-36044			
	V-36045	C	3/10/69	н
	V-36046	C	10/4/74	
	V-36048	C	5/23/72	H
	V-36052	<u>A</u>		9
	V-36053	<u>B</u>	1/5/72	
	V-36053	<u>D</u>	7/24/72	in the state of t
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	V-36055 V-36057	8	1/5/72 1/5/72	=
	V=36063	Ž	10/5/72	H
	V-36064	C B	10/5/72	
	V-36065	± 1 − 1 − 1 − 1 − 1 − 1 − 1 − 1 − 1 − 1	8/9/71	épa .
	V-36066	C	8/9/71	
	V-36068	8	7/24/72	
	V-36069		1/5/72	H
	V-36070			H
	V-36071	C	7/24/72	***
	V-36073		1/5/72	*
	V-36074		1/5/72	, e. H
	V-36077	0	1/5/72	***
	V=36078	Ç	1/5/72	
	V=36079 V=36080	Ĉ	1/5/72	
	V-36081	C	1/5/72	NO.
	V-36082	Ă	1/5/72	

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TEST NO GP-592
VEHICLE SA V/18

V=36084	C	21955-
V-36085	C B C	Н Н
V=36086	Č	
	8	1/5/72
V-36087	В	1/5/72
V-36093		AAA02-7
V=36094	8	1/5/72
V-36095		44 634 37
V=36096		
V≈36098		· · · · · · · · · · · · · · · · · · ·
V-36100	F A	8/3/73 H
V-36102	A	1/5/72 H
V-36103		
V-36104		the sales
V=36105		ACT OF THE PARTY O
V=36106		## 1 Part
V-36107		17516
V-36107	Α	7/94/70
		7/24/72
V-36108		
V-36109		The state of the s
V-36110		だんものろう.
V-36111		
V-36113	° D	1/5/72 H
V-36114		11/26/69
V-36115		2/9/70 H
V-36116		6/17/70
V-36117		6/17/70 -
V-36118		6/17/70 -
V=36119	Α	1/5/72
V-36120	a de la companya de	6/17/70 -
V-36121		6/17/70
V-36122		6/17/70 -
V=36123		6/17/70 -
V=36124		
		6/17/70
V-36125		6/17/70 H
V-36126		9/17/70
V-36127		9/17/70 H
V-36128		9/17/70
V-36129		9/17/70
V-36130		9/17/70 -
V-36131		9/17/70
V-36132		9/17/70 H
V-36133	8 7	11/5/70 H
V=36134	A	3/25/71 H
V-36136	A	7/24/72 H
V-36137	A	5/23/72 H
V-36138	A	7/24/72 H
V-36139	Ā	99 4 99 A 4 99
	A	
V-36141	A	6/9/71
V-36142	A	1/5/72 H
V-36143		1/5/72
V-36144		1/5/72
V-36145		1/5/72 -
V=36146		1/5/72

TEST NO.

V-36150		1/5/72	н
V-36152		5/23/72	
V-36153		5/23/72	
V-36154		5/23/72	**
V-36155		5/23/72	
V-36156		5/23/72	-
V-36160		5/23/72	
V-36161		5/23/72	
V=36163		7/24/72	
V-36165		7/24/72	•
V-36167		10/5/72	-
V-36800	A	3/25/71	Н
V+36600	A A	8/9/71	
V-36802	A	8/9/71	
V-36803	AND THE STATE OF T	8/9/71	
V=36804	, and the second	3/25/71	1 1 1000
V-36805		3/25/71	н
V-36807			Ä
V-36808	<u> </u>	3/25/71	
V=36809	В	10/5/72	н
V-36810		3/2/72	-
V-36811	A	3/25/71	
V-36812	A	3/25/71	Н
V-36813	A	3/25/71	Н
V-36814	A	3/25/71	H
V-36815	A	3/25/71	Н
V-36816	A	3/25/71	н
V-36818	A-	3/25/71	H
V-36819	A	8/9/71	
V-36821	A	3/25/71	H
V-36822		12/10/73	Н
V=36823	A	3/2/72	₩
V-36826		3/2/72	Н
V=36827	A	3/25/71	*
V-36828	A	3/25/71	•
V-36829	A	3/25/71	Н
V=36837	Α	8/9/71	F2 .
V-36838	A	3/25/71	H
V-36839	A	1/5/72	Н 1.1
V-36840	A	1/5/72	. H
V-36842	A	8/9/71	
V=36844	A	1/5/72	Н
V=36846	À	12/10/73	H
V-36848		3/25/71	199
V-36849	A	3/25/71	
V-36850	7	3/25/71	
V=36851	7	3/25/71	н
V-36852	R	3/25/71	H
	A	3/25/71	H
V=36853	Ä	3/25/71	
V-36854	A .		-
V=36856	A	3/85/71	
V=36857	A	3/25/71	· ·
V-36862	A .	3/25/71	H
V-36863	A	3/25/71	H

LAUNCH OPERATIONS

CATALOG SHEET INDEX
DATE: OCTOBER 4, 1974
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TEST NO.

GP-592 SA V/IB

V-36864 3/25/71 A 1/5/72 H V-36866 3/25/71 V-36871 A -V-36872 A 8/9/71 H 3/25/71 V-36873 3/25/71 V-36875 A 3/25/71 V-36876 H V-36877 1/5/72 V-36880 1/1/73 H 1/5/72 H V-36883 H V-36884 3/2/72 V-36885 8/3/73 H V-36887 3/25/71 H 3/25/71 V-36888 A H 8/9/71 H V-36891 A 8/9/71 V-36892 3/25/71 A H V-36893 B 12/10/73 V-36896 A H V-36900 1/5/72 A 3/25/71 V-36901 A V-36905 3/25/71 A H 3/25/71 V-36906 V-36908 8/9/71 V-36912 3/25/71 V-36913 3/25/71 V-36914 6/17/70 V-36916 1/1/73 3/25/71 V-36922 A A 3/25/71 V-36923 B 3/25/71 V-36924 V-36925 A 3/25/71 3/25/71 V-36926 V-36927 A 3/25/71 V-36928 A 3/85/71 3/25/71 V-36930 V-36931 3/25/71 3/25/71 V-36932 3/25/71 V-36933 3/25/71 V=36934 H V-36935 6/1/73 A 8/3/73 V=36936 8 H 8/3/73 V-36937 V-36939 6/1/73 V-36940 6/1/73 H V-36941 6/1/73 V=36942 12/10/73 H V-36943 12/10/73 V-36944 12/10/73 12/10/73 H V-36945 6/3/74 V-36946 V-37015 1/5/72 V-37027 V-37038 H REVESION ...

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ATIONS PAGE

TEST NO VEHICLE

V=38000		A		
V-38001	*	. f	2/9/70	
v-38006			1/5/72	H
V-38007	The state of the s		1/5/72	te t
V-38008			1/5/72	
V-38009			1/5/72	
V-38010		A	10/4/7	4 =
V-38011			1/5/72	
V-39000		C	3/25/7	
V-39001		E	7/24/7	
V=39002		C	3/25/7	
V-39003		C	3/25/7	
V-39004		D	7/24/7	
V-39005		C	3/25/7	•
V-39007		C	7/24/7	
V-39008		A. A. A.	7/24/7	
V-39009		A	7/24/7	
V-39010		A	7/24/7	
V-39011		A	6/1/73	
V=39012		C	6/1/73	
V-39013		8	6/1/73	
V-39014		В	6/1/73	
V-39015		A	2/9/73	
V-39016		В	12/10/	
V=39017		· A · ·	2/9/73	
V-39018		В	3/16/7	
V-39019			1/5/72	
V-3902Q		A	2/9/73	
v-39021		8	8/3/73	
V-39022		. B	8/3/73	
V-39023		A	2/9/73	H
V-39024			3/2/72	H
V-39025			3/2/72	
V-39026		A	2/9/73	H .
V-39027			3/2/72	
V-39028			3/2/72	. H
V-39029			3/2/72	
V-39030			3/2/72	! H
V-39031			5/23/7	,5 H

APOLLO SATURN TEST AND OPERATIONS CATALOG SHEET

PAGE 1 OF 2

PAGE 1 O

THE PURPOSE OF THIS TEST IS TO CONDUCT A PNEUMATIC LEAK TEST ON THE S-IB STAGE RP-1 FUEL TANK FORWARD BULK-EADS.

THIS TEST & DOES ___ DOES NOT CONTAIN HAZARDOUS OPERATIONS.

THIS PROCECURE IS HAZARDOUS SECAUSE RP-1 FUEL LEVEL WILL BE RAISED TO THE OVERFILL SEISCR (APPROX. 637 INCHES) AND THE SHIB STACE RP-1 FUEL TANKS WILL BE PRESSURIZED TO 21 PSIG.

AFTER ALL SYSTEMS ARE FECO FIGURED, THE PAD WILL BE CLEARED FOR THE RP-1 LEVEL ADJUST CRERATION (TO CHERFILL SENSOR). A CREW WILL BE CLEARED INTO THE PAD TO CLOSE THE PTOS SENTON WALVES AND DISCONNECT THE RP-1 SENSE LINES. AFTER THE CREW HAS CLEARED THE PAD THE SHIP STAGE RP-1 FUEL TANKS WILL BE PRESSURIZED TO 1 PSIG AND A PRESSURE DECOMPT TEST WILL BE CONDUCTED FOR 15 MINUTES. IF THE PRESSURE DROP-OFF TEST IS SATISFACTORY, THE TANKS WILL BE PRESSURIZED TO 10 PSIG AND ANOTHER PRESSURE DROF-OFF TEST WILL BE CONDUCTED FOR 15 MINUTES. UPON VERIFICATION OF A STABILIZED CONDITION IN THE SHIP STAGE FUEL TANKS, THE PRESSURE IN THE TANKS WILL BE VENTED TO CREVITION IN THE SHIP STAGE FUEL TANKS, THE PRESSURE IN THE TANKS WILL INSPECTION AND DAY PRINCIPATE CHERACION. AFTER THIS CREW HAS CLEARED THE PAD, THE SHIP PLEL TANKS WILL BE PRESSURIZED TO 21 PSIG THEN IMMEDIATELY VENTED TO ZERO PSIG. A CREW WILL THEN GO TO THE PAD TO CONCUENT LEAK CHECKS, OPEN THE PTOS BENTON VALVES AND CONJECT THE RP-1 SENSE LINES. AFTER THIS CREW HAS CLEARED THE PAD, A RP-1 LEVEL ADJUST CPERATION WILL BE CONDUCTED (LOWER LEVEL TO 600 INCHES). UPON COMPLETION OF THE LEVEL ADJUSTMENT THE PAD WILL BE OPEN FOR NORMAL WORK.

TEST REQUIREMENTS:

NONE

A 1915/4 ASTP UPDATE		\$00eners 4/5/14 & 1 19/22
S PEV DATE T SONTOACTOR SERBSONAL	PEASON	Contractor Approval KSC Approval
15 Divers	5-877/	12/4/13
12 TASKINSC APPROVA	NC. TAZIMAZ CO.	12 APPROVAL DATE
Frank Compa	LU-ENG	12/4/73

TEST TITLE					KBC TEST NUMBER	
	•				V-20083	
SATURN S-IB RP-	I TANKS PNEUMATIO	TEST		, ,	AS REQUIRED	
LC-39, PAD B	14 COMPUTER PROC IN	CENTIFICATION		13	EST. TEST TIME 14 HOURS	
SUPPORT REQUIREMEN	TS *					
KSC SYSTEMS SAFE	ity i sa a di 1811.		B GROUND PON	FD	******	
SECURITY POLICE		IWS				
FIRE FIGHTING			1 STRIP CHAR	T RECORDE	RS	
MEDICAL		PTC	-			
LCC MEASUREMENTS FACILITY MEASURE		DDA DEE	-			
RP-I SURVEILLANG		ECS	-			
COUNT CLOCK			gradients			
S-IB STAGE POWER	\$ 15 miles			1 12 13		
e garage						
			San	,		

14 ITEM CONTINUATION

NBU FORM 23-184C (2:67)

APOLLO/SATUR	KSC OPERATIONS I TEST AND OPERATIONS CATALOG	SHEET	PAGE 1 OF2
1 7237 71746		jes v silegy gjer	V-20084
LAURCH VOHICLE STR	AIN MEASUREMENTS IN HIGH WIND		AS REQUIRED

4 TEST OBJECTIVES

TO CETAIN LAUGH VEHICLE STRAIN DATA.

S TEST SESCHIPTION EQUIPMENT STATUS CONFIGURATION

THIS TEST __ DCES

TO DOES NOT CONTAIN HAZARDOUS OPERATIONS.

CONFIGURATION: TEST TO BE PERFORMED AT PAD B WITH THE S/V FULLY ASSEMBLED.

LAUTOH VEHICLE STRAIN MEASUREMENTS (S-IB) AND TIME CORRELATED WIND MEASUREMENTS WILL BE RECORDED & MONITORED ANTIME HIGH WINDS OCCUR WHICH MIGHT JEOPARDIZE THE STRUCTURE OF THE LAUNCH VEHICLE.

ADDITIONAL DATA, WHICH IS DESTRABLE, ARE PRIMARY & AUXILLIARY DAMPER ARM PRESSURES & POSITIONS AND APOLLO ACCESS ARM EXTENSION.

B.9.0.1.3.1 B.9.0.1.3.2 B.9.0.1.3.3

osela 1	PUPDATE	Towers 8/5/24 7. Boyon
S FEV. DATE T CONTRACT OF APPROVAL S/U.D. ONFNS		Contractor Approval - KSC Approval DATE 2/28/3
S/FRAIK BRYAN	11 ORGANIZATION LV-EX	MARCH 5 173

APOLLO SATURN TEST AND OPERATIONS CATALOG (SHEET 2)	PAGE 2 OF 2
	2 785 :181 200864
1. TEGT TITLE	V-70084
LAUNCH VEHICLE STRAIN MEASUREMENTS IN HIGH WIND	5 E445C4 C TV
	AS REQUIRED
13. LOCATION 114 COMPUTER PAGE, INSENTIFICATION LC 39 N/A	i the rest time
LC 39 N/A	
And the second s	**
INTERSTAGE - NONE	
ON COMPLEX SUPPORT - DIS COMMUNICATIONS & RADIO	
OFF COMPLEX SUPPORT - GSE MEASURING (INS)	
OFF COMPLEX SUPPORT - GSE MENSONER CINSY	
17. OTHER APPLICABLE REFERENCE DOCUMENTATION	-
POITAUNITHOD MOTE 61	**************************************
	and the second second
[20] [20] 상황 경화경하는 경우와 보고 하는 것은 하는 것 같다.	
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KBC FORM 23.7946 / 67/

KBC FORM 27 1380 17/671

KSC OPERATIONS APOLLO SATURN TEST AND OPERATIONS CATALOG SHEET	PAGE 1 OF 2	-	
TEST TITLE	2 HSC TEST NUMBER - V-20085		1 72
SATURI S-IB FUEL VOIT PLEUMATIC TEST	A-SOOS		S/
	AS REQUIRED		. '
TEST GBJECT.VES			3. L
			14. SU
THE PURPOSE OF THIS TEST IS TO CONDUCT A PNEUMATIC TEST	ON THE S-IB STAGE RP-1		
F.E.L. TANK VEST VALVES.			KS
			SE
			FI ME
			LC
TEST DESCRIPTION EQUIPMENT STATUS CONFIGURATION		 	FA
			RP
THIS TEST X DOES . TO DOES NOT CONTAIN HAZARDOUS OPERATION	NS.		co
			S-
THIS PROCEDURE IS HAZARDOUS BECAUSE THE S-IB STAGE RP-1	TANKS WILL BE PRESSURIZED	: I i i i i i i i i i i i i i i i i i i	-1.
TO 19.5 PSIG. RP-1 TALKS ARE FILLED TO 600 INCH LEVEL.			
AFTER S-18 STAGE POWER UP AND ALL SYSTEMS RECORFIGURED,	THE S-IB STAGE RP-1 FUEL		17 CT
TANKS WILL BE PRESSURIZED TO 10 PSIG AND A LEAK CHECK CO	NDUCTED. THE FLIFT TANKS		
	Anch Till a in arthr		
WILL THEN BE VENTED TO ZERO PSIG AND THE PAD WILL BE CLE.	ARED. THE S-IB STAGE		,
RR-1 FUEL TAIKS WILL THEN BE PRESSURIZED UNTIL EITHER OR	ARED. THE S-IB STAGE BOTH STAGE FUEL VENTS		
WILL THEN BE VENTED TO ZERO PSIG AID THE PAD WILL SE CLE RR-1 FUEL TANKS WILL THEN BE PRESSURIZED UNTIL EITHER OR OPET OR UNTIL 19.5 PSIG IS NOTED ON THE FUEL TANK MONITOR WILL BE VERIFIED AT ZERO PSIG BEFORE THE PAD IS OPENED.	ARED. THE S-IB STAGE BOTH STAGE FUEL VENTS		:8 37
RR-1 FUEL TANKS WILL THEN BE PRESSURIZED UNTIL EITHER OR OPEN OR UNTIL 19.5 PSIG IS NOTED ON THE FUEL TANK MONITOR	ARED. THE S-IB STAGE BOTH STAGE FUEL VENTS		:B 17/
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RR-1 FUEL TANKS WILL THEN BE PRESSURIZED UNTIL EITHER OR OPER OR UNTIL 19.5 PSIG IS NOTED ON THE FUEL TANK MONITOR	ARED, THE S-IB STAGE BOTH STAGE FUEL VENTS R GUAGE. THE FUEL TANKS TEST REQUIREMENTS: NONE	` ` `	
RR-1 FLEL TRAKS WILL THEN BE PRESSURIZED UNTIL EITHER OR OPEN OR UNTIL 19.5 PSIG IS NOTED ON THE FUEL TANK MONITON WILL BE VERIFIED AT ZERO PSIG BEFORE THE PAD IS OPENED. 15/4 ACTP DIMATE REASON	ARED. THE S-IB STAGE BOTH STAGE FUEL VENTS R GUAGE. THE FUEL TANKS TEST REQUIREMENTS: NONE TO SUMMER 1/5/4 J. Bry	/ZZ	
RR-1 FUEL TAXS WILL THEN BE PRESSURIZED UNTIL EITHER OR OPER OR UNTIL 19.5 PSIG IS NOTED ON THE FUEL TANK MONITO WILL BE VERIFIED AT ZERO PSIG BEFORE THE PAD IS OPENED.	ARED. THE S-IB STAGE BOTH STAGE FUEL VENTS R GUAGE. THE FUEL TANKS TEST REQUIREMENTS: NONE TO SUMME 1/5/4 J. Dry	/ZZ	
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RR-1 FUEL TALKS WILL THEN BE PRESSURIZED UNTIL EITHER OR OPEN OR UNTIL 19.5 PSIG IS NOTED ON THE FUEL TANK MONITOR WILL BE VERIFIED AT ZERO PSIG BEFORE THE PAD IS OPENED. 1. SIG ACTIP VICATE REV. DATE REASON CANADATE REASON CANADATE CONTRACTOR APPROVA 1. Channel 3. Channel 4. Channel 4. Channel 5. Channel 6. Channel	TEST REQUIREMENTS: NONE TO Contractor Approval TEST APPROVALED TO SECURITY SECURI	/ZZ	
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APOLLO SATURN TEST AND OPERATIONS	CATALOG (SHEET 2)	PAGE 2 0= 2
SATURN S-IB FUEL VENT PNEUMATIC TEST		V-20085
2. LOCATION 14. COMPUTER PROC. INDENT FICE	TION	AS REQUIRED
LC-39, PAD B CAPU		7 HOURS
KSC SYSTEMS SAFETY SECURITY POLICE FIRE FIGHTING MEDICAL LCC MEASUREMENTS FACILITY MEASUREMENTS	S-IB GROUND POWER IWS RP-1'STRIP CHART RECORD PTCS DDAS DEE-3	DERS
RP-1 SURVEILLANCE CAVERAS COUNT CLOCK S-IB STAGE POWER	ECS	
7 CTHEA APPLICABLE REFERÊNCE DOCUMENTATION		
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KSC OPERATIONS APOLLO SATURN TEST AND OPERATIONS CATALOG SHEET	FAGE 1 OF 2
SATURN 15 FIN REPLACEMENT AT PAD 8	V-20086
SATURN IS FIN REPLACEMENT AT PAD B	2 EFFECTIVITY
	AS REQUIRED

4 TEST CO.ECTI.ES

TO REPLACE FINS ON THE S-IE STAGE WITH THE LAUNCH VEHICLE AT PAD B.

S TEST DESCRIPT ON TO. PHENT STATUS CONFIGURATION

THIS TEST X DOES ... DOES NOT CONTAIN HAZARDOUS OPERATIONS.

THIS PROCEDURE IS HAZARDOUS BECAUSE IT REQUIRES TEST PERSONNEL TO WORK AT HEIGHTS, NEAR HEAVY EQUIPMENT AND UNDER SUSPENDED LOADS.

A 65 TG. MOBILE CRANE WILL BE USED TO MOVE REPLACEMENT FINS TO THE MOBILE LAUGHER IERD LEVEL AND TO UNBOX THE FINS. THE FINS WILL BE INSPECTED, FLORESCENT DYE CHECKED AND PREPARED FOR INSTALLATION. SOFT BELLOWS COVERS WILL BE INSTALLED ON LOX AND FUEL SUCTION LINE BELLOWS AND RED FLAGS INSTALLED. CRITICAL DIMENSIONS WILL BE MEASURED PRIOR TO FIN REMOVAL.

FINS WILL BE REMOVED AND REPLACED ONE AT A TIME.

THE HOLDOOM: ARM WILL BE RETRACTED FOR THE FIN BEING REMOVED. HUCK BOLTS WILL BE REMOVED. FIN HANDLING ASSEMBLIES WILL BE ATTACHED. THE HAMMERHEAD CRAFE WILL BE USED TO TRANSFER EACH FIN TO THE MOBILE LAUNCHER ZERO LEVEL AND TO HOIST THE REPLACEMENT FIN TO THE LAUNCHER PEDESTAL. SPECIAL HANDLING EQUIPMENT WILL BE USED TO MOVE FINS BETWEEN THE VEHICLE AND THE PEDESTAL. REPLACEMENT FINS WILL BE BOLTED IN PLACE, HOLDOWN ARMS RELOADED, AND ALIGNMENT ACCOMPLISHED.

TEST REQUIREMENTS:

KSC FORM 23-238C 17/67)

NONE

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6. PEV. DATE	REASON	Contractor Approval KSC Approval
JE Curens	5-8771	. 12/4/75
Fronk Engen	11. SEGANIZATION GU-ENG	12 APPROVAL DATE 12/4/73

APOLLO S	ATURN TEST AND CPERATIONS	CATALOG (SHEET 2)	PAGE _ 2 = 2
TEST TITLE			S #15 -F2, FC 0616
	REPLACEMENT AT PAD B		V-20085
· SHIORN ID FI	REPURCE ENT AL FAU B		11 5.751 **
* **			AS REQUIRED
LOCATION	14 COVELTER PROC. NOENTIFIC	ATION	1 1 ET TEST T VE
LC-39B	N/A	*	3 CAYS
SUPPORT REQUIRED			
HEAVY EQUIP	MENT PERSONNEL		
KSC SYSTEM			
SECURITY PO			
CRANE CREWS			
OTV (OPTICA	(AL)		
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OTHER APPLICABLE	REFERENCE DOCUMENTATION		
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ITEM CONTINUATION			
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KC OPERATIONS APOLLO/SATURN TEST AND OPERATIONS CATALOG SHEET	PAGE _1_OF _2_
1 TEST TITLE	3. KBC TEST NUMBER V-20100
SATURN 18 LALMOH VEHICLE I-20 MINUTE SIMULATION TEST	AS-206 AND SUBS

4. TEST OBJECTIVES

TO MAINTAIN LY FIRING ROOM CREM PROFICIENCY DURING EXTENDED VEHICLE PROCESSING FLOW.

FILET EFECRIPTION EGUIPMENT STATUS CONFISURATION

THIS TEST DOES X DOES NOT CONTAIN HAZARDOUS OPERATIONS.

THIS TEST WILL PROVIDE LMR PROFICIENCY TRAINING OF THE LAUNCH VEHICLE FIRING ROOM CREW, THICLUDING THE REDLITE MONITORS, THROUGH THE USE OF DOAS TAPES SIMULATING LAUNCH VEHICLE AND ASSOCIATED ESE FUNCTIONS OCCURRING DURING THE FINAL 20 MINUTES OF THE SATURN 1B LAUNCH VEHICLE COUNTDOWN.

THE TEST WILL BE RUN WITH DOAS TAPES SIMULATING VEHICLE AND ESE FUNCTIONS. TCE AND A CATA MODIFICATION UNIT (DMU) IS AVAILABLE TO INTRODUCE MALFUNCTIONS AGAINST A BASELINE TAPE.

THE TEST WILL EVASUE THE FIRING ROOM CREW TO SIMULATE A NORMAL LAUNCH CD FROM T-20 MINUTES TO T-0; AND TO REACT TO SIMULATED MALFUNCTIONS TO DETERMINE THE OPERATORS ABILITIES TO COPE WITH MALFUNCTIONS AND EITHER CONTINUE THE TEST OR PROCEED WITH VEHICLE SAFING AND RECYCLE.

THE LAURCH VEHICLE, AND 110A COMPUTERS ARE NOT REQUIRED.

HARDWARE INDICATIONS WILL NOT BE DISPLAYED. DIGITAL ACQUISITION SYSTEM WILL NOT BE USED FOR THE TEST. BACKUP FIRING ROOM SUPPORT IS NOT REQUIRED.

TEST REQUIREMENTS:

NONE

8	91514	ASTP UPDATE			To amens 9/5/14 60 18/22
A .		REVISE DESCRIPT	ION, ADD DMU CAPABILITY,	, CHANGE	Down 3/19/3
S. REV.	DATE		REASON		Contractor Approval KSC Approval
	. D. OWE		5-8771	0.	SEPTEMBER 10, 1971
	RAIK BRY		11. ORGANIZATION LV-ENG	17	FEBRUARY 14, 1972

APOLLO/SATURN TEST AND OPERATIONS CATAL	OG (SHEET 2)	*408_2_OF_2_	_		
SATURN IB LAUNCH VEHICLE T-20 MINUTES SIMUL	2 48-00-00-00	<u> </u>			
18. LOCATION 14. COMPUTER PROC. INCENTIFICATION		T EST TEST THE			
LC-39 N/A		4 HOURS			
DDAS TAPE RECORDING COUNT CLOCK		ECKOUT EQUIPMENT (TCE) ATION UNIT (DMU)			
COUNT CLOCK DISPLAYS COUNT CLOCK SUPERIMPOSED ON TV MONITOR TV MONITOR OIS (RF & AUDIO) OIS RECORDING LV STAFF LOOP LV BACKUP PHONE LOOP (YELLOW PHONE) LCC POWER SUPPLIES LCC STRIP CHART RECORDERS NOT MONITORING HARD WIRE FUNCTIONS					
17. OTHER APPLICABLE REFERENCE DOCUMENTATION			·		
	•	. •			
S ITEN CONTINUATION					

KEC FORM 23-234C (7/67)

Canada district	APOLLO SATURN TEST AND OPERATIONS CATALOG SHEET	PAGE 1 OF 3
Section.	TRITTLE	V-20101
State or State	SATURN IB LAUNCH VEHICLE ELECTRICAL SYSTEMS TEST	AS-206 AND SUBS

TEST OBJECTIVES

- 1. TO ELECTRICALLY MATE THE LAUNCH VEHICLE STAGE INTERFACES AFTER THE LAUNCH VEHICLE HAS BEEN MECHANICALLY MATED.
- TO VERIFY PROPER OPERATION OF THE LAUNCH VEHICLE SWITCH SELECTORS AND ASSOCIATED GSE.
- 3. TO VERIFY THAT ALL LAUKH VEHICLE STAGES CAN SUCCESSFULLY TRANSFER TO INTERNAL POWER BOTH VIA TERMINAL COUNTDOWN SEQUENCER (TCS) AND MANUALLY.
- 4. TO VERIFY PROPER OPERATION OF EMERGENCY DETECTION SYSTEM (EDS).

TEST DOSCRIPTION EQUIPMENT STATUS SCHEIGURATION

THIS TEST COES Y DOES NOT CONTAIN HAZARDOUS OPERATIONS.

A. LAUNCH VEHICLE ELECTRICAL INTERFACE MATE - THE S-IB, S-IVB AND IU WILL BE MECHANICALLY MATED ON ML IN HIGH BAY OF THE VAB.

IN PART 1 (RESISTANCE MEASUREMENTS), THE LAUNCH VEHICLE STAGES WILL BE ELECTRICALLY ISOLATED AND RESISTANCE MEASUREMENTS WILL BE MADE AT EACH PIN OF THE STAGE UNGERFACE CONTECTORS TO THE VEHICLE SKIN. RESISTANCE MEASUREMENTS WILL NOT BE MADE AT FLIGHT CONTROL CABLES. FLIGHT CONTROL CABLES WILL BE MATED THROUGH INTERSTAGE SEPARATION SIMULATORS WITHOUT BREAKOUT BOXES AT THE SHIB/SHIVE INTERFACE. AND MATED DIPECTLY AT THE SHIVE/IN INTERFACE.

IN PART II (VOLTAGE CHECKS), FUSES WILL BE INSTALLED IN BREAKOUT BOXES TO WHICH THE INTERSTAGE CABLES ARE CONNECTED. VEHICLE POWER WILL THEN BE APPLIED AND VOLTAGE MEASUREMENTS WILL BE MADE AT SELECTED POINTS AT THE BREAKOUT BOXES.

THE LAUKOH VEHICLE WILL BE ERECTED ON THE ML IN THE VAB AND ALL STAGES WILL BE MECHANICALLY AND ELECTRICALLY MATED FOR ALL REMAINING PARTS OF THIS TEST.

B. LAUNCH VEHICLE SWITCH SELECTOR TEST - A MANUAL INTERFACE TEST WILL BE RUN TO VERIFY THE INTERFACE BETWEEN THE IU SWITCH SELECTOR PANEL AND THE LAUNCH VEHICLE SWITCH SELECTORS. THIS TEST WILL VERIFY THE STAGE SELECT SIGNALS AND "ALL ONE'S".

ALL AUTOMATED TEST WILL BE PERFORMED TO VERIFY THE LITTERFACE BETWEEN THE GROUND COMPUTER ALD THE SWITCH SELECTORS USING "FLOATING ONE'S" ALD "ALL ONE'S".

A SECOND AUTOMATED TEST WILL BE PERFORMED IN WHICH EACH SWITCH SELECTOR WILL BE INDIVIDUALLY SELECTED AND ALL OUTPUTS COMMANDED TO READ. MALFUNCTIONS WILL BE INTRODUCED TO TEST FOR PROPER RESPONSE IN THE ESE.

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<u></u>	3/10/72	ADD MOFO REQ	ATS & COMP. PROC INDENT	IFICATION	5 Jaconens 410/2.	Front Bron
4 SEV	DATE		PEASON		Contractor Approval .	KSC Approval
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APOLL	APOLLO/SATURN TEST AND OPERATIONS CATALOG (SHEET 2)				
SATURN IB L	AUNCH VEHICLE ELECTRICAL SYSTEMS TEST	V-20101			
12. LOCATION	14. COMPUTER PROC. INDENT. FICATION	AS-206 AND SUBS			
VAB	(SEE ITEM 18)	9 HOURS			

RD 25008

GROUND POMER
S-IB STAGE POWER
S-IVB STAGE POWER
IU POWER
RCA 110A COMPUTERS
FACILITY ECS (GAS)
LV ECS (GAS)
DOAS
DDAS TAPE RECORDING
BACK-UP BATTERIES
LCC MEASURING (LVO)
OAT EQUIPMENT
DEE-6

TOTHER APPLICABLE REFERENCE DOCUMENTATION

18. ITEM CONTINUATION

- .(5) TEST DESCRIPTION (CONTINUED)
- C. LAUNCH VEHICLE POWER TRAISFER TEST THE TEST WILL BE RUN IN TWO PARTS, THE FIRST PART USING PLUGS-IN CONFIGURATION AND THE SECOND PART USING PLUGS-OUT CONFIGURATION

IN PART I, PLUGS-IN CONFIGURATION, THE LAUNCH VEHICLE STAGES WILL BE TRANSFERRED TO INTERNAL POWER BY USING AN AUTOMATIC PROGRAM. AFTER VERIFICATION OF NORMAL OPERATION, ALL STAGES WILL BE TRANSFERRED BACK TO EXTERNAL POWER USING ENERGENCY POWER TRANSFER.

IN PART II, PLUGS-OUT CONFIGURATION, THE LAUNCH VEHICLE WILL BE TRANSFERRED TO INTERNAL POWER, SIMULTAMEOUSLY BY MANUAL CONTROL. THE STACES WILL VERIFY NORMAL OPERATION AND TRANSFER BACK TO EXTERNAL POWER INDIVIDUALLY. THE LAUNCH VEHICLE WILL THEN BE TRANSFERRED SIMULTAMEOUSLY TO INTERNAL POWER VIA THE TOS. AFTER VERIFICATION OF NORMAL OPERATION, ALL STAGES WILL BE TRANSFERRED BACK TO EXTERNAL POWER UTILIZING SHIB CUTOFF. FINALLY A POWER TRANSFER TO INTERNAL POWER AND BACK TO EXTERNAL POWER BY AN AUTOMATIC PROGRAM WILL BE EXECUTED.

- D. EMERGENCY DETECTION SYSTEM (EDS) TEST THIS TEST WILL CHECKDUT THE EMERGENCY DETECTION SYSTEM WITHIN THE LAUNCH VEHICLE WITH THE EXCEPTION OF THE Q-BALL AND REABORT REQUEST CIRCUITRY.
- E. PULSE STRETCHER CALIBRATION TEST THE CALIBRATION OF THE PULSE STRETCHER CIRCUITS WILL BE PERFORMED TO INSURE THAT THE RANGE SAFETY COMMAND RECEIVERS OF THE S-13, AND S-IVB WILL ACCEPT THE FOLLOWING COMMANDS: APM AND ENGINE CUTOFF, PROPELLANT DISPERSION, AND THE SAFING COMMAND FOR THE S-IVB GALY.
- F. REDUNDANT POWER SUPPLY TEST THE ADEQUACY OF THE REDUNDANT POWER SUPPLIES WILL BE VERIFIED IN THIS TEST.

KSC FORM 27 356C (F. 67)

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	OPERATIONS CATALOG SHEET (CONTI		PAGE 3 OF 3		
ES- 7:- LE			/-20101	1.	
HAV HOLLAL BI : DELTA	ICLE ELECTRICAL SYSTEMS TEST	3.1	S-206 AND SUBS		
M CONT NUATION		^	5-206 Ard 5055		
4. COMPUTER PROC.	INDESTIFICATION (CONTINUED)	And the second		1.7.4	
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5-13) 60006050	3.5.1,1.3.1, 3.5.1	1.1.3.2, 3.5.1.1.	4.1, 3.5.1.1.4.2	一代。	
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2/1/73 UPDATE	MSFC PEQUIREMENTS	S/J.D.OWENS	S/FRANK BRYAN		

4 TEST CRIECTIVES

TO VERIFY SV/PEDESTAL LATERAL STIFFNESS CONSTANTS AND DETERMINE THE NATURAL FREQUENCY OF THE FIRST BENDING MODE.

S TEST DESCRIPTION EQUIPMENT STATUS CONFIGURATION

THIS TEST TO DOES TO DOES NOT CONTAIN HAZARDOUS OPERATIONS.

MAZARDOUS OPERATIONS:

- (A) WORK AT HEIGHT
- (5) CABLE UTTER TENSION

THE TEST WILL BE PERFORMED IN THE VAB WITH THE S/V FULLY ASSEMBLED USING THE BP-30 CSM WITH STUB TOWER. HOLDOWN ARMS WILL BE PRELOADED. ALL ACCESS DOORS WILL BE SECURED. ACCESS KITS MAY BE LEFT INSTALLED IN THE INTERSTAGES. SHIVB TUNNEL COVERS WILL NOT BE INSTALLED.

THE STIFFHESS TEST WILL BE PERFORMED IN EACH OF TWO DIRECTIONS DIFFERING BY AN ANGLE OF 50:53 DEGREES, A WEST PULL AND A NORTH PULL. THE TEST WILL APPLY A TRANSVERSE PULL FORCE OF THE VEHICLE AT THE 8P-30 STUB TOWER. THE PULL FORCE APPLIED SHALL BE INCORPORTALLY INCORPORTED FROM 0 TO A MAXIMUM, AND THEN DECREASED TO 0 AT THE SAME INCORPORTAL PATE FOR TWO COMPLETE CYCLES IN EACH DIRECTION.

YEARCLE DEFLECTION WILL BE MEASURED BY ELECTRO-MECHANICAL AND/OR OPTICAL METHODS. OPTICAL DEFLECTION MEASUREMENTS WILL BE CONSIDERED VALID OVER MECHANICAL MEASUREMENTS. THE PULL FORCE WILL BE SUPPLIED BY A HYDRAULIC CYLINDER WITH A CABLE TRANSMITTING THE PULL FORCE TO THE YEMICLE.

THE DY AMIC TEST SHALL BE PERFORMED BY MANUALLY PUSHING THE VEHICLE IN THE PITCH.
PLAKE TO A DEFLECTION AMPLITUDE OF 5 INCHES TO DETERMINE THE NATURAL FREQUENCY OF THE
FIRST SELDING MODE OF THE VEHICLE/PEDESTAL COMBINATION. PHOTOGRAPHIC RECORDING WILL
BE MACE OF THE AMPLITUDE AND FREQUENCY. THE DYNAMIC TEST WILL BE REPEATED 2 TIMES.
DEFLECTION AMPLITUDE SHALL BE MEASURED AT VEHICLE STATION 2037.5.

-						
B 1911	5/4	ASTP UPLATE	•.		15 amin 9/5/7	100 9/22
A 7/2	25/72	ADD DYNAMIC T	EST, CHG HAZ OPER,	ADD TEST REQ		
6. DEV. 1 D	ATE .		REASON		Contractor Approval	KSC Approval
7 CSHTPACT	CRAFP	POVAL	\$ OPSAN ZATION		B DATE	
S/J. D.			5-8771		AUGUST 25, 1971	
S/J. T. S/FPAIX	1130	MREY	LV-EC-2 LV-EIG		9/17/71 9/23/71	
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APOLLO SATURN TEST AND OPERAT	TIONS CATALOG (SHEET 2)	0438 22_cr_2
1. TEST TITLE		3 K3 C K3 T K, M4 C K
SATURN IB PULL TEST ,		V-20102 AS-206 AND SUBS
VAB	TIFICATION	1 DAY
S SUPPORT REQUIREMENTS .		
RD26005 GROUND POWER	L/V ECS (GAS) CIF TM RECORDING	

S-IB STAGE POWER
COUNTDOWN CLOCK
GSE MEASURING (INS)
DOAS
DDAS TAPE RECORDING
RCA 110A COMPUTERS
FACILITY ECS (GAS)
FACILITY COMM. (OIS)
VMGSE

TM RECORDS
DEE-6
KSC PAD SAFETY
FIRE FIGHTING
MEDICAL
PLATFORM OPERATIONS
TIMING
FILM CAMERAS
OVERHEAD CRANE

17. OTHER APPLICABLE REFERENCE DOCUMENTATION

B ITEM CONTINUATION

5. TEST DESCRIPTION (CONTINUED)

TEST REQUIREMENTS:

LV TM-011-001-2H (NONE)
IU 7921601 0.3.3.0(ONLY)
5-1B 60C06050 (NONE)
5-1VB 1B86721 (NONE)

KSC FORW 23-334C (//67)

APOLLO SATURN TEST AND OPERAT		
UTEST PITCE	2 48C 7637 NUMBER V-20103	
SATURN 18 LAUGH VEHICLE MALFUNCTION C	VERALL TEST , SERECTIVITY AS-209 AND SUBS	7
4 TEST OBJECT VES		***

#30 PORW 21 3780 17 67

TO VERIFY PROFER STAGE AND GSE RESPONSE TO MALFUNCTIONS INDUCED DURING THE AUTOMATIC FIRITG SEQUENCE. TO VERIFY PROPER OPERATION OF THE ELECTRICAL/MECHANICAL VEHICLE AND GSE SYSTEMS DURING A NORMAL AUTOMATIC FIRING SEQUENCE AND FLIGHT SEQUENCE. TO PERFORM PLUS TIME TEST WITH VARIOUS COMMANDS BEING INITIATED VIA THE SPACECRAFT TO VERIFY PROPER OPERATION OF THE LY RANGE SAFETY COMMAND SYSTEM.

S TEST DESCRIPTION COMPRENT STATUS CONFIGURATION

THIS TEST X DOES DOES NOT CONTAIN HAZARDOUS OPERATIONS. HAZARDOUS OPERATIONS:

- HYDRAULIC SYSTEM PRESSURES ARE APPLIED WHILE SERVO ACTUATOR MECHANICAL LOCKS ARE REMOVED (S-IVE ENGINE MAY GIMBAL).
- HAZARDOUS SUBTASKS ARE PERFORMED DURING THE TEST.
- S-178 EIGHE WILL GINEAL DURING PLUS TIME (PART 9).
- D. HOLDOOM: ARIS WILL PELEVSE

THE LAUSCH VEHICLE WILL BE ERECTED ON THE ML, AND ALL STAGES MECHANICALLY AND ELEC-TRICALLY MATED.

THE TEST WILL BE DIVIDED INTO NINE PARTS: THESE PARTS MAY BE IDENTIFIED AS FOLLOWS:

- PART 1: TCS POWER SUPPLY FAILURE, PREMATURE COMMIT & MANUAL CUTOFF.
- PART 2: PREPARATION'S COMPLETE & LAUNCH SEQUENCE START FAILURE.
- PART 3: 5-1E VOLTAGE FAILURE CUTOFF.
- PART 4: SEQUENCE FAILURE CUTOFF. PART 5: POST IGNITION CUTOFFS
- PART 6: THRUST FAILURE CUTOFF
- PART 7: ANY ENGINE CUTOFF AFTER COMMIT
- PART 8: PROPELLART SIM LOAD, CHILLDOWN PERTURBATIONS, LAUNCH FAILURE CUTOFF
- PART 9: SIMULATED FLIGHT TEST

THE THE PARTS COISIST OF VARIOUS SIMULATED MALFUNCTIONS TO VERIFY PROPER OPERATION OF THE LAUNCH VEHICLE AND GROUND SUPPORT EQUIPMENT DURING ABBREVIATED COUNTDOWN, LIFTOFF AS (DURING PART' 9 OLLY) FLIGHT SEQUENCE. PART 8 WILL INCLUDE A SIMULATED VEHICLE PROPELLANT LOAD & DRAIN. PART 9 WILL INCLUDE THE COMPLETE TALL & TATS GROUND COMPUTER PROSPAMS.

T				CONTINUED ON	PAGE 2
F	. €/29/3	ADDED !EW PART	7	100mins 421/3	J 372 3/2
ε	3/22/3	DELETED PART 7 ACCED PART 8	,	JO Cewens 411/3	1 amm
5	2/12/3	GELEPAL REVISION	α:	2/13 S/J.D. OXENS	2/15 S/F. 5RYAN
<u> </u>	11/28/2	ADD LV TEST RE	QUIPEMENTS	11/28 S/J.D. OWENS	11/29 S/F. BRYAN
2	10/19/2	TEST REGMTS, L	OCATION, HAZARDOUS OPS	5/J.D. OWENS	10/19 S/F. BRYAN
S. BEY.	DATE		REASON	Contractor Approval	KSC Approval
\$/	J. D. OWE	28	5-8771, BATC	FEB. 2, 1972	
5/1	FPANK ERY	'Al	LV-ENG	FEB. 14, 197	72

APOLLO SAT	JRN TEST AND OPERATIONS CATA	LOG (SHEET 2) FACE 2 CE 2
SATURN IB LAUNC	H VEHICLE MALFUNCTION OVERA	,
PAD	SEE ITEM 18	AS-209 AND SUSS THREE DAYS
IS SUPPORT REQUIREMEN	\$	
GROUND SUPPORT S-IB STAGE POWER S-IV5 STAGE POWER IU POWER BACKUP BATTERIES TIMING COUNTDOWN CLOCK LCC MEASURING (IN LCC MEASURING (IN LCC MEASURING (IN RD 26004	CIF DATA DISI DDAS DDAS TAPE REI DEE-6 110A COMPUTEI S) LV W-G ECS D) FACILITY ECS	ECC TM RECORDING CORDING CIF TM RECORDING CIF COMPUTER S CIF DATA TM RECORDER

17. OTHER ASPLICABLE REFERENCE DOCUMENTATION

14. COMPUTER PROGRAMS (CONTINUED)

18. ITEM CONTINUATION

CE 10	FT04	FT37	IAAR	IATC	£401
	FT05	FT42	IAEC	IATS	LZTJ
EAIC	FT06	FT43	IAFC	IZEA	MTC1
EAPF	FT10	FT45	· IAHD	IZEC	1.798
EAPS	FT20	FT47	IALL	IZRE	::199
EASS	FT23	FT49	IAMC	IZSA	ี ฉลอบ
FE50	FT27	FT55	IAPX	1233	CATI
FT81	FT31	GE01	IARS	LAF2	
FT03	FT33	GT16	TASP	LPW	

5. TEST DESCRIPTION (CONTINUED)

TEST REQUIREMENTS

60C06050 3.2.5.3.6, 3.5.3.1.1, 3.5.3.1.2.1 THRU 3.5.3.1.2.9, 3.5.3.1.3, 3.5.3.1.4, 3.5.4.2, 3.7.2.7

(IU) 7921601 0.3.5.2.2.3.2, 0.3.5.2.2.3.1

(LV) TM-011-001-2H 1.1.1.4.1, 1.5.1 THRU 1.5.2, 1.8.1, 2.0.1.1, 2.0.1.+, 7.0.1, 7.0.2

н	7/5/4	ASTP UPDATE .	5 - 19 Cum 9,5 p. 1) - 2 2 2 2 2 2
G.	12/3/73	Bases in the same of the same	12/3/73 12/3/3 S/L.R. CO-9/10/E FLERYON

45C FORM 27 334C 17 671

	APOLL		SC OPERATIONS	CATALOG SHEET	PAGE 1	_or 2
2.1	YITCH		ORKS/VEHICLE INTE		1	
A TEST	OBJECT:/ES	t			AS-206 AND	SUBS
			PELLANT NETWORKS/VI	EHICLE INTERFACE	SIGNALS.	
		A servery		•		
	•					
				er e de la companya del companya de la companya del companya de la		
TEST	CESCAIPTIO	TATE TP3W4IUES IN	US CONFIGURATION .			
THIS	TEST _	DCES 🗻 DC	ES NOT CONTAIN HAZA	ARDOUS OPERATIONS.	ing district the second se	
Sou	RCE OR SI	IMULATED AS CL	E VEHICLE OR IN TO OSE TO THE SIGNAL NTS PTCR NETWORKS	SOURCE AS POSSIB	TE DECEIPT OF	CICNIALE
SIM	Graidh Of	GINATING IN PR R FIRING ROOM ROL PAVELS.	OPELLANTS NETWORKS CONTROL PANELS.	LOGIC ARE SIMUL RECEIPT OF THE	ATED AT THE PTCR SE SIGNALS IS CO	NETWORKS NFIRMED
ALL	CIRCUITS	CROSSING THE	ML & LCC PROPELLA AGES FOR RP-1, LO	VIT ESE/VEHICLE II V, AND LH2 SYSTEM	INTERFACES ARE TO	BE VERIFIED
THE		, ENICLE WILL B	E LOCATED IN THE V	· The State of the		
TEST	r REQUIRE	<u>POITS</u>				
NONE	:				uaskin kurjuntkin lekili. Kalendari	
					errina (1)	
c	3/5/1	ASTP UPDATE			Fya a 41-1	10 19/22
		Hara H			Jt amens 4/5/74	4 / 1/20
В	2/15/73				J N Ouneus 1/5/3	Jronfe 1272
Ά.	4/18/72	UPDATE TEST	DESCRIPTION:		x Krokake	Trate Can
GONT	PASTOR APP	POVAL CA	REASON B ORGANIZATION		Contractor Approvat	KSE Approvol
F	7 Owe	ens	5-857		Sept. 2, 19	71
UNI	JEC APPRO	in mos	II. ORGANIZATION		L APPROVAL DATE	
	toole	Dun	LU-EI	VG	3/14/72	

APOLLO/SATURN TEST AND OPERATIONS CATALOG (SHEET 2) EST TITLE SATURN IB PROPELLANT NETWORKS/VEHICLE INTERFACE VERIFICATION COCATION VAB ILD-20104-B RCA 110A COMPUTER LV POWER UP SE POWER SIMULATOR PTCS-PTCR SIMULATOR	PAGE 2 OF 2 V-20104 SERVET V-20104 SERVET V-TY AS-206 AND SUSSISSISSISSISSISSISSISSISSISSISSISSISS
EATURN IB PROPELLANT NETWORKS/VEHICLE INTERFACE VERIFICATION VAB N/A SUPPORT REQUIREMENTS SID-20104-B RCA 110A COMPUTER JV POWER UP SE POWER UP SE POWER UP SEE-6 ETWORKS PTCR SIMULATOR	V-20104 S EFFECT VITY AS-206 AND SUSS
LOCATION VAB N/A NID-20104-B RCA 110A COMPUTER LV POWER UP SE POWER UP SE POWER UP SE POWER SIMULATOR	AS-206 AND SUSS
LOCATION VAB N/A NID-20104-B RCA 110A COMPUTER LV POWER UP SE POWER UP SE POWER UP SE POWER SIMULATOR	AS-206 AND SUSS
VAB N/A SUPPORT REQUIREMENTS SID-20104-B RCA 110A COMPUTER JV POWER UP SE POWER UP SEE-6 ETWORKS PTCR SIMULATOR	
ID-20104-B RCA 110A COMPUTER LY POWER UP LSE POWER UP DEE-6 ETWORKS PTCR SIMULATOR	
RCA 110A COMPUTER LY POWER UP SE POWER UP DEE-6 ETWORKS PTCR SIMULATOR	
DEE-6 ETWORKS PTCR SIMULATOR	1 7 7
THER APPLICABLE REFERENCE DOCUMENTATION	
TEM CONTINUATION	
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 Difference of the property of the	

KSC. FORM 28-338C (7/67)

APOLLG/SATURN TEST AND OPERATIONS CATALOG SHEET

PAGE 1 OF 2

TEST TITLE

APOLLG/SATURN TEST AND OPERATIONS CATALOG SHEET

PAGE 1 OF 2

AND TEST NUMBER
V-2010S

SATURN IS USE ELECTROMECHANICAL SYSTEMS TEST

AS-206 AND SUBS

4 TEST COJECTIVES

TO VERIFY PROPER OPERATION AND ISOLATION OF THE REDUNDANT LSE RETRACTION SYSTEMS.

S TEST DESCRIPT ON EQUIPMENT STATUS CONFIGURATION

THIS TEST __ DOES __ DOES NOT CONTAIN HAZARDOUS OPERATIONS.

THE LAURCH VEHICLE WILL BE ERECTED ON THE MOBILE LAUNCHER WITH ALL UNBILICAL CAPRIER PLATES ATTACHED. SERVICE ARMS, SMORT CABLE MASTS AND S-IB PROPELLAT MASTS WILL BE IN A SAFED CONDITION TO PREVENT POSSIBLE UMBILICAL EJECTION OR RETRACTION. THE TEST WILL BE CONDUCTED BOTH IN THE VAS AND AT THE PAD WITH ALL PARTS BEING PERFORMED IN THE VAB AND AT THE PAD. SERVICE ARM CONTROL SWITCHES ON FIRS 3 AND 7 WILL BE OPERATED. IN PARTS I - V TO PROVIDE EID-TO-END VERIFICATION OF THE TWO REDUNDANT LISE RETRACTION SYSTEMS.

TEST REQUIREMENTS .

NO: JE

С	915/4	ASTP UPDATE	-1-11		Filmens 9/5/4	J A 4/22
9	2/15/73	ADD PD TURGE	P		Ja awens 4/5/3	
A	10/12/2	DELETE TOS TO	EST. REDUCE FROM 8 TO 5 PARTS IN VAB & AT PAD.	PARTS.	Facuro 10/16/2	1
6. PEY	DATE		REASON		Contractor Approval	KSC Approval
	. D. OWES	350	5-8571		SEPT 24, 1971	
	RANK BRYAL		II. ORGANIZATION	12.	APPROVAL DATE SEPT 27, 1971	*)

PAGE 2 35 2 APOLLO SATURN TEST AND OPERATIONS CATALOG (SHEET 2) IZ NAC YEAT NUMBER I. TEST TITLE V-20105 SATURN IB LSE ELECTROMECHANICAL SYSTEMS TEST AS-206 AND SUBS 14 COMPUTER PROC NOSH" ".CATION 18. EST. TEST THE VAR & PAD B 16 SUPPORT PEQUIREMENTS RD 28100 LSE BACK-UP BATTERIES SERVICE ARM FIRING POWER SYSTEM DDAS RCA 110A COMPUTERS HP GAS FACILITY COMM. (OIS) DEE-6 S-IB ESE POWER LSE POWER 17. OTHER APPLICABLE REFERENCE COCUMENTATION 18. ITEM CONTINUATION

KSC FORM 23-338C (7'67)

TO VERIFY CORPATIBILITY AND PROPER OPERATION OF ALL LAUNCH VEHICLE AND GSE SYSTEMS DURING A NORMAL AUTOMATIC FIRING SEQUENCE AND FLIGHT SEQUENCE WITH UMBILICAL EJECTION ALD SERVICE ARM ALD SHORT CABLE MAST RETRACTION.

TEST CESCHIPTION EQUIPMENT STATUS CONFIGURATION

THIS TEST & DOES

DOES HOT CONTAIN HAZARDOUS OPERATIONS.

MAZARDOUS OPERATIONS:

- A. UMBILICALS EJECTED.
- B. SERVICE ARYS AND SON'S RETRACTED.

THE LAUNCH VEHICLE WILL BE ERECTED ON THE MOBILE LAUNCHER IN THE VAB. ALL STAGES WILL BE MEGWAICALLY AND ELECTRICALLY MATED. THE LAUKCH VEHICLE WILL BE PREPARED AND FUNCTIONALLY CHECKED IN AN ASSPENIATED COUNTDOWN DURING WHICH THE TM, RF, RSCR, GGC, POWER AND EDS SYSTEMS WILL BE VERIFIED. A PROPELLANT DISPERSION TEST WILL BE RUIL THE COUNT WILL PROCEED NORMALLY THROUGH "PREPARATIONS COMPLETE" AND INITIATION OF THE FIRING COMMAND. THE TERMINAL COURT SEQUENCE WILL PROCEED THROUGH COMMIT. LIFTOFF WILL BE SIMULATED BY SERVICE ARM CONTROL SWITCH OPERATION TO COMMAND UMBILICAL EJECTICAL AND INFLIGHT SERVICE ARY RETRACTION. LY ECS WILL BE TERMINATED AT UMBILICAL DISCORNECT. SA 49 WILL NOT BE RETRACTED. EXCEPT FOR PLUGS OUT DAT CONFIGURATION. THE LAURCH VEHICLE WILL BE ELECTRICALLY AND MECHANICALLY SEPARATED FROM THE GSE AFTER LIFTOFF TO SIMULATE FLIGHT CONDITIONS AS CLOSELY AS POSSIBLE. THE FLIGHT COMPUTER WILL PROGRAM THE LAUTICH VEHICLE THROUGH AN ABBREVIATED FLIGHT SEQUENCE THROUGH TIME BASE 5. THE TEST WILL BE TERMINATED AFTER RANGE SAFETY COMMAND FUNCTIONS HAVE BEEN GIVEN TO THE POWERED STAGES.

F	1.514	ASTP UPDATE	Jee 500 mons 15/4 1/4 / 1/20
E.T	12/3/73		July 1/23/3 by from the
D	/2/73	PPORELLANT DISPERSION TEST ADDED	Fr Cevers 4/3/3 Jer Smil 4/
c i	/2/73	CHAIGE EFFECTIVITY BASE 5 WAS 4,	\$/ 1/3/3 1/5/3 J.D. OWEHS S/BRYAN
в :	0/27/2	REVISE HAZ, ADD REQRES & COMP PROG	5/ 10/27/2 11/1/2 J.D. OVENS S/BRYAN
A 5	/18/72	ADD PROGRAM AND SUPPORT REQUIREMENTS	S/ . 5/19/2 S/ 6/15/2 L.R.CORERIDGE F. BRYAN
	DAYE	REASON	Contractor Approval KSC Approval
	D. OWE	1 383241241134	9 CATE
S MASAY	SC APPRO		FEB. 2, 1972
S/FR	AK BRY	AN LV-ENG	FEB. 9, 1972
12C + COL	23-1400 IT	67.	

APOLLO SATURN TEST AND OFERATIONS CATALOG ISHEET 2 1 TEST TITLE V-20106 SATURN IB SERVICE ARM OVERALL TEST AS-207 AND SUSS > LOCA 115% (SEE ITEM 18) 8 HOURS 5 SUPPORT BY CLIRENCE STA GROUND POWER DOAS TAPE RECORDING S-IB STAGE POWER RCA 110A COMPUTERS S-IVB STAGE POWER LV W-G ECS IU POWER LV ECS (GAS) LOCAL COMMAND CARRIER BACKUP BATTERIES COUNTDOWN CLOCK (DRSCS SYSTEM & IU) OAT EQUIPMENT LCC TM RECORDING LSE POWER LCC TH STATION MONITOR LCC MEASURING (LVO) IU RF STATION GSE MEASURING (LVO) CIF REAL TIME SUPPORT DDAS RD 25004

17. OTHER APPLICABLE REFERENCE DOCUMENTATION

16. ITEM CONTINUES TION

5. TEST DESCRIPTION (CONTINUED)

TEST REQUIREMENTS:

TM-011-001-2H

1.1.1.4, 1.1.1.4.1, 1.5.1 THRU 1.5.2, 1.8.1, 1.9.1.1,

2.0.1.1, 2.0.1.6, 5.0.1(4LL), 7.0.1, 7.0.2

S-IR 60C06050 3.7.1.1.1, 3.7.1.1.2.1, 3.7.1.1.2.2, 3.7.1.1.2.3, 3.7.1.1.2.4, 3.7.1.1.2.5, 3.7.1.1.3, 3.7.1.1.4

S-IVB 1886721

7921601

0.3.3.2.3, 0.3.4.2.1 7.76/ 0.3.4.2.5, 0.3.5.2.2.3.2, 0.3.5.2.2.3.1, 0.3.4.2.0.1

14. COMPUTER PROC. IDENTIFICATION (CONTINUED)

FE50	FT20	GT16	IAPX	IZEA	LA01	ZT96
EASS	FT10	GE01	IAMC	IATS	LAF2	CAPU
EAPS	FT08	FU01	IALL	IATC	LAPW	OAT1
EAPF	FT06	FT55	IAFC	IASP	: IZ33	NT99
EATC	FT04	FT49	IAED	IASL	IZSA	NT98
CE10	FTB1	FT47	IAAR	IARS	IZRE	LZTU

45C FORM 29-83#C 17/ 671

KSC OPERATIONS PAGE _____OF _2__ APOLLO SATURN TEST AND OPERATIONS CATALOG SHEET NEC TEST NUMBER V-20107 SATURE IE LOX & RP-1 DELTA P SENSE LINES EFFECTIVITY QUALIFICATION TEST AS-206 AND SUBS . TEST OBJECTIVES

TO YERIFY SATISFACTORY OPERATION AND LEAK TIGHTNESS OF THE S-IB DELTA P MEASURING SYSTEM GSE.

S TEST DESCRIPTION EQUIPMENT STATUS CONFIGURATION

THIS TEST TY DOES COES NOT CONTAIN HAZARDOUS OPERATIONS.

HAZARDS CONSIST OF RERSONIEL WORKING AT HEIGHTS. THIS TEST IS PERFORMED IN MINE PARTS:: PARTS 1, 2, 3, 5 & 6 WILL BE PERFORMED IN THE VAB. PARTS 4, 5, 7, 8 6 9 WILL BE PERFORMED AT THE PAD

- 1. RP-1 DELTA P SYSTEM CLEANLINESS A CONTAMINATION ANALYSIS IS PERFORMED TO VERIFY THE PARTICLE COURT AND MOISTURE LEVEL MEETS THE REQUIREMENTS OF KSC-C-123. LEVEL 11.
- 2. HE PURGE PRESSURE SWITCH ACTUATION A FUNCTIONAL VERIFICATION IS PERFORMED ON THE PRESSURE SWITCH.
- 3. HE FLOW RATE VERIFICATION THE PROPER FLOW RATE IS VERIFIED IN THE RP-1 LEVEL SENSING, HIGH PRESSURE LINE.
- 4. RP-1 DELTA P SYSTEM LEAK AND FUNCTIONAL TEST A LEAK CHECK IS PERFORMED ON THE LINES AND SOLEWIDS.

- CONFIGURATION: 1. RP-1 PTCS TRANSDUCERS DISCONNECTED FROM SYSTEM:
 - RP-1 SENSING LINES CONNECTED TO PTCS TRANSDUCER RACK, VP-9, AID S/A 1A.
 - S-IB VEHICLE ERECTED.

- (CC	OF THISED	PAGE 2 ITEM 18)				1
Ē	10/11/2	ASTP UPDATE	•	\$ 5 amens 9/5/	1 3 Cover	I
D	4/5/73	ADD TEST 8 8 9 RP-1 LCADING TE	(SENSE LINE PURGE & POST (ST)	Ja Quens 1/4/3		4'01
- : :C	2/27/73	A contract the second	PRESS DECAY TEST ADDED ED TO INCLUDE SCM 4	JP Owens 2/27/3	Jan 3/8	3 577
5	10/31/2	INCLUDE LOX D	ELTA P SYSTEM	John John Stell	10000 2111	ud
Α	3/28/2	CHAINE HAZARD	S	9/28/2 S/J.D. OWENS	9/29/2 S/F. BRYAN	
& REV.	DATE	4.4.2.4.4	REASON	Contractor Approval	KSC Approvet	1
7 6551	PACTOH APP	FOVAL	8 ORGANIZATION	9. DATE		1
S/J	. 5. OVE	:s	5-8771 THE BOETING COMPANY	MAY 10, 1972		1
IC. MASA	FSC APPAO	VAL	11. ORGANIZATION	12. APPROVAL DATE		1
S/FR	ZAIK BRYA	x	LV-ENG	MAY 15, 1972		
KSC POP	w 23-784 B (7	/ 07+	<u> </u>	· · · · · · · · · · · · · · · · · · ·		

PAGE LALDY LE. APOLLO SATURN TEST AND OPERATIONS CATALOG (SHEET 2) C WITTEST WINDER . TEST TITLE V-20107 SATURN IB LOX & RP-1 DELTA P SENSE LINES T KEFEST WITH **OUALIFICATION TEST** 14 SOMPLIER PROT. NOENTIFICATION 24 HOURS ML-1/VAB/PAD

16 SUPPORT REQUIREMENTS

BOEING, PNEUMATICS (6000 PSI GN2 AND HE TOWER SUPPLY) BOEING, SWING ARMS (S/A-IA ONLY) BOEING, PTCS & PROPELLANT POWER BENDIX, CONTAMINATION ANALYSIS FACILITY COMMUNICATIONS (OIS) CCSD, LUT NETWORKS CCSD, STAGE FEC, MEASUREMENTS

17. OTHER APPLICABLE REFERENCE COCUMENTATION

651CD9890

18. ITEM CONTINUATION

ITEM 5 CONTINUED

- SET-UP FOR LOX DELTA P SENSE LINES PRESSURIZATION A PROCEDURE IS OUTLINED FOR PRESSURIZING LOX DELTA P LINES.
- LOX DELTA P SYSTEM CLEARLINESS A CONTAMINATION AVALYSIS IS PERFORMED TO VERIFY THE PARTICLE COUNT AND MOISTURE LEVEL MEETS THE REQUIREMENTS OF KSC-C-123, LEVEL II.
- LOX DELTA P SYSTEM LEAK TEST A LEAK TEST IS PERFORMED ON LOX DELTA P LINES. 7.
- 8. RP-1 HIGH & LOW PRESS SENSE LINE PURGES FOR RP-1 LOADING - PURGE RP-1 SELSE LINES WITH HE.
- POST TEST RP-1 LOADING SENSE LINE TEST TEST FOR GAS IN HIGH PRESSURE SENSE LINES, PERFORM PRESSURE DECAY TEST.

TEST REQUIREMENTS

NONE

KEC FORM 28-338C (7/67)

KSC FORM 28-338C 17. 67

KSC OPERATIONS APOLLO-SATURN TEST AND OPERATIONS CATALOG SHEET	PAGE 1 0F 2
1. TEST TITLE	V-20108
YAB MOSILE LANGHER 1 LOX AND FUEL LEAK CHECKS	AS-206 AND SUBS

A TEST SOLESTIVES

TO VERIFY COMPLIANCE WITH LEAK REQUIREMENTS FOR LERVICE ARM AND FILL MAST PORTIONS OF THE LOX AND FUEL (RP-1 & LH2) FILL SYSTEMS, VEHICLE VENT SYSTEMS, AND LH2 HEAT EXCHANGER.

S TEST DESCRIPTION EQUIPMENT STATUS SONFIGURATION

THIS TEST X DOES

DOES NOT CONTAIN HAZARDOUS OPERATIONS.

HAZARDS INCLUDE: A. PERSONNEL WORKING AT HEIGHTS.

VEHICLE LEAK CHECKS WILL NOT BE PERFORMED. PRESSURIZATION WILL BE DONE USING HELIUM RD G12. LEAK DETECTION WILL BE ACCOMPLISHED USING LEAK CHECK SOLUTION, USON AND MASS SPECTROMETER. RETEST WILL BE PERFORMED PER THIS PROCEDURE.

S-INB TURBINE START BOTTLE VENT LINE AND PUMP SEAL BLEED LINE WILL BE DISCONNECTED AND PLUGGED AT VEHICLE AND FACILITY GH2 VENT SYSTEM INTERFACES. VEHICLE GH2 VENT LINE WILL BE DISCONNECTED FROM THE S-IVB AND BLIND FLANGED, AND A MANUAL VALVE INSTALLED AT LUT DISCONNECT. SKID VALVES WILL BE CLOSED AND DEBRIS VALVES WILL BE CLOSED OR LINES CAPPED.

LEAK CHECKS WILL BE PERFORMED AS FOLLOWS: THE S-IB LOX AND RP-1 FILL AND DRAIN LINES FROM THE MAST CUT-OFF VALVES TO THE VEHICLE FILL AND DRAIN VALVES WILL BE PRESSURIZED WITH HELIUM (LOX) AND GNZ (RP-1) USING S-IB STAGE PRESSURE. PRESSURIZE LOX AND LHZ FILL LINES ACROSS S-IVB AFT SERVICE ARM (S/A G) USING "N" BOTTLES AND CHECK FOR LEAKS; PRESSURIZE VEHICLE GNZ VEHT LINE ACROSS S-IVB FORWARD SERVICE ARM (S/A 7) AND DOWN TO LUT DISCONSECT USING 700 PSIG HELIUM SUPPLY AND CHECK FOR LEAKS; AND PRESSURIZE START SOTTLE VEHT LINE AND PUMP SEAL BLEED LINE USING GNE "N" BOTTLES AND CHECK FOR PRESSURE DECAY. PRESSURIZE LYZ HEAT EXCHANGER VEHT & CHECK. UPON COMPLETING CHECKS, EACH SYSTEM WILL BE VENTED AND PETURED TO STANDBY CONFIGURATION.

TEST REQUIREMENTS: 1-/5/73 ADD 112 PEAT EXCHANGER VENT CHAIGE S-18 LOK PRESSURIZATION TO GHE DELETE PRESSURIZED OVER 50% OF BURST 3/11/2 7/12/72 CHANGE PRESSURIZATION METHOD E FEY DATE REASON Contractor Approval 7 SSATHASTSP APPROVAL & CHGANIZATION 9 DATE S/J. D. OWENS 5-8771 NOV. 18, 1971 IS MASA-MES APPROVAL 12 APPROVAL DATE 11. ORGANIZATION S/FRAK BRYAN LV-ENG 12/6/71 #SC FORW 23-1108 7 47

APOLLO SATURN TEST AND OPERATIONS CATALOG (SHEET 2)	PAGE 2 05 2.
TEST TITLE	2 NAS TEST NUMBER
	V-20108
VAB MOBILE LAUNCHER 1 LOX AND LH2 FUEL LEAK CHECKS	AS-206 AND SUSS
VAB-ML I N/A	40 HOURS
SUPPORT REQUIREMENTS	
MASS SPECTROMETER W/OPERATOR KSC SAFETY OIS RD 28300	
OTHER APPLICABLE PEFERENCE DOCUMENTATION	
ITEM CONTINUATION	
그림 사용 사람 보다를 위 되는 일본 사용하는 모두 모든 사람	

	West of the
APOLLO SATURA TEST AND OPERATIONS CATALOG SHEET	Page _1 of 2
* 1421 Feek	. ALT TEST NUMBER
and the state of t	1=10100
THE TALL IN COLUMN TO SERVER.	. AS-206 AND SUBS
The same and the s	
(3) CLOSE THE SERVICE STORE (MOS) TO THE MEAN CHECK.	TAMES BOOK TRUE TO PACE. TEMPS FEE TO PACE. LETTUR OF TRANSFER, LETTUR OF TRANSFER ML 8
The second secon	
E TEST CESCH OT THE CHARLES SEE THE CONTROL OF THE	
HAMINGI TO TITLOTES	
	**
A. W. E. P.S. A. A. A. A. A. A. A. A. CRANLER OPERATION	1-2 Broke I aid con jet
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BART I OF THE OVERATING STEP, STANDS WITH PREPARATIONS FOR THE	ISPER AND ENDS WITH
SECT OF SECTION AS A CONTROL STORY STARTS WITH APPRICAL OF LACES AND THE SECTION OF PREMATICS AND	THE AT THE PAD AND THE PAD AND
j: #2.	
FIG. 100 ATTEMPT AND THE TASKS	ASSIMILED WITH MSS
SOUTH TO SERVICE SERVICES OF THE WARRENCE OF BAY.	PARE 9 STOURL ML & LV
	1/27
A STATE OF THE PARTY OF	17. inun: 15,70 / 1/200
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D. Fred Rom LU-Exit	9/13/7/

: APOLL	O'SATURN TEST AND GPERATE	ONS CATALOG (SHEET 2)	PATE 2 - 0 F 2	
SATURN IB LAUNCH VEHICLE CONTROL PROCEDURE FOR TRANSFER OF S/V TO THE FAC			2-1011 Page 1011 Page 1011	
			145-205 N.J. 5.85	
LOCATION	14. COMPUTER PAGE. NEEN!	N/A	1 51 -0175 T AZ	
1 C-39	The state of the s	1576		
KSC PAD SAF SECURITY PO FIPE FIGHTI MEDICAL GSE MEASURI GSE MEASURI LCC MEASURI LCC MEASURI	ETY LICE NG NG (LVO) (E) (INS)	SERVICE STRUCTURE MEASURING SPACE VEHICLE ECS FACILITY TV (OTV) FACILITY COTM. (OIS) SEARC : LIGHTS WEATHOR FORECAST		
		The state of the s	The state of the s	
			T. William media	
RD-25003				
The Table	CRIPTION (CONTINUED)			
TEST REC	DIREMENTS:			
(LV)	TM-011-001-2: 8.6	.1, 8:0.3, 9:0.1.1, 9:0.1.	2	
		Text many		

HSC FORM 23-3490 -7 67.

KSC OPERATIONS APOLLO SATURM TEST AND OPERATIONS CATALOG SHEET	PAGE 1 OF 2
TEST TITLE	V-20110
SATURN IS LAUNCH VEHICLE CONTROL PROCEDURE FOR RETURN OF S/V TO THE VAB	AS-206 AND SUBS

4 TEST CBJECTIVES

THE CAUCITIVE OF THIS PROCEDURE IS TO PRESENT OPERATIONS REQUIRED TO ACHIEVE THE FOLLOWING TASKS: 1) PREPARE THE LAUNCH VEHICLE FOR RETURN OF THE 5/V FROM THE PAD TO THE VAS, 2) RETRACTION OF THE MOBILE SERVICE STRUCTURE (MSS) FROM THE LUT! VEHICLE, 3) PREPARE LAUNCH VEHICLE FOR TEMPORARY STAY IN THE VAB.

S TEST DESCRIPTION EQUIPMENT STATUS CONFIGURATION

THIS TEST TE DOES NOT CONTAIN HAZARDOUS OPERATIONS.

HAZAPOS: A. CRAMLER HIGH PRISSURE HYDRAULICS & CRAWLER OPERATION

- B. PLATFORM RETPACTION & EXTENSION
- C. HIGH WIND HAZARDS
- D. MON AT HEIGHTS
- E. ELECTRICAL STORM HAZARDS

THE LAURCH VEHICLE CONTROL PROCEDURE FOR RETURN OF THE SV TO THE VAB IS IN ACCEPTIVE WITH THE CHERALL GUIDELINES OF THE DLO TRANSFER PLAN. THIS PROCEDURE COUNTIESTS OF PRE-TRANSFER CONDITIONS AND OPERATING STEPS. THE PRE-TRANSFER COLUTIONS SECTION OF THIS PROCEDURE PROVIDES A CHECK LIST OF PRE-MOVE CONDITIONS ALL REQUIREMENTS FOR THE LAUNCH VEHICLE AND GSE.

PART I OF THE OPERATING STEPS STARTS WITH PREPARATIONS FOR THE TRANSFER AND ENDS WITH THE LAURCH VEHICLE TRANSFER TO THE VAB. : . .

PART II OF THE OPERATION STEPS STARTS WITH ARRIVAL OF LAUGH VEHICLE AT THE VAB AND ENDS WITH THE COMPLETION OF SECURING OPERATIONS AND CONNECTION OF ECS.

TEST REQUIPEMENTS

NONE

8	9/6/4	ASTP UPDATE		To Growns 1/5 M John	2/22
A	11/14/2	CHANGE PART	I, ADD RD NO.	J& awens"/4/2 /2 w &	1/5/2
6 = = 1	CATE	A CHARLE	REASON	Contractor Approval KSC App	20001
1 mar 2			6 ORSANIZAT.ON	9. DATE	
	it Du	neval	5-8571	(eugust 31, 197	7/
5414	-15 42245	10.	11 CAGANIZATION	12 APPROVAL CATE	
1 M	how ce	Pine.	LU-ENG	9/13/71	
	. 15 +140 /.	The second second second second second second second			-

AFULLU	SATURN TEST AND OP	ERATIONS CATALOG (SHEET 2)	PAGE 2 OF 2
TEST TITLE			I KSC TEST NUMBER
SATURN IB LAUNCH VEHICLE CONTROL PROCEDURE FOR		V-20110	
	RETURN OF S/V, TO TH	E VAB	AS-205 AND SUSS
LOCATION	14. COMPUTER PROC. IN	DENTIFICATION	IS. EST. TEST THE
LC-39		N/A	22 HOURS
KSC PAD SAFE SECURITY POL FIRE FIGHTIN MEDICAL LCC MEASURIN LCC MEASURIN GSE MEASURIN GSE MEASURIN SERVICE STRU SPACE VEHICL FACILITY TV	ICE G G (LYO) G (INS) G (LYO) G (INS) C (INS) CTURE MEASURING E ECS	FACILITY COMM SEARCH LIGHTS WEATHER FOREC	
RD-25003 '	LE REFERENCE DOCUMENTA	TION	
. ITEM CONTINUATIO	DN		The Marine State of the Land
. ITEM CONTINUATIO	DN		

KSC FORM 28-938C (7/67)

KSC OPERATIONS APOLLO SATURN TEST AND OPERATIONS CATALOG SHEET	PAGE 1 OF 2
1. TEST TITLE	V-20111
SATURN IB VERIFICATION TEST AFTER LIGHTNING STRIKE	AS-206 AND SUBS

4 TEST GBJECTIVES

TO VERIFY OPERATION OF VULLERABLE COMPONENTS, C'ECK ELECTRONIC SYSTEMS, AND ESTABLISH OVERALL SYSTEM CONFIDENCE AFTER A LIGHTNING STRIKE.

S TEST CESCRIPTION EQ. IPMENT STATES CONFIGURATION

THIS TEST Y DOES DOES NOT CONTAIN MAZARDOUS OPERATIONS.

HAZARDOUS OPERATIONS:

A. HIGH PRESSURE GASES

B. REPOVAL OF ORDIVANCE INITIATORS AND DETCHATORS

AFTER CONFIRMATION OF A LIGHTNING STRIKE ON THE VEHICLE AT THE PAD, APPROPRIATE PARTS OF THIS TEST WILL BE RUN. PART I IS A CHECK OF THE MOST VULNERABLE COMPONENTS.

PART II IS A MORE COMPREHENSIVE CHECK OF THE ELECTRONICS SYSTEMS. PART III WILL

ESTABLISH OVERALL SYSTEM CONFIDENCE AFTER A DATA ANOMALY OR A VISUAL INSPECTION HAS REVEALED DAMAGE.

PART 1 - WILL BE PERFORMED UPON CONFIRMATION OF A LIGHTNING STRIKE, WHEN DATA IS AVAILABLE, TO ANOMALIES IN DATA WERE OBSERVED AND A VISUAL INSPECTION REVEALED NO DAMAGE.

PART IA - WILL BE PERFORMED PRIOR TO T-9 HOURS IN COOT AND LCD.

PART IS - WILL BE PERFORMED AFTER T-9 HOURS IN COOT AND LCD.

PART II - TO BE RUI: IN URRYOWN SITUATIONS. DATA IS NOT AVAILABLE TO CONFIRM SYSTEMS

PART III - WILL BE RUN CILY IF SUFFICIENT DATA DISCREPANCIES OR PHYSICAL DAMAGE WARRANTS SUCH ACTION. PORTIONS OF THIS PART WHICH ARE TO BE RUN WILL BE DEPENDENT ON VEHICLE CONFIGURATION. AFTER REMOVAL OF ORDINANCE INITIATORS AND DETONATORS PART II WILL BE RUN TOGETHER WITH ANY STAGE PECULIAR TESTS NOT RUN IN PART II WHICH MAY BE REQUIRED TO ESTABLISH CYCRALL SYSTEM CONFIDENCE.

C	19/5/4	ASTP UPDATE			Dames 1/5/21.	J. Engar
2			LIST & TEST REQUIREMENTS	dam.	j Damens /2 /3	Fronty 4/24/2
A	12/8/2	ADDS IVAR LIS	ST; ADOS TEST REQUIREMENTS; C; UPDATES PART III	DEFINES	700 mens 14/8/2	Thigselie.
DEV.			REASON		Contractor Approval	KSC Approval
	J. D. OWS		BATC, 5-8771	9.	9/20/71	
S/F. BRYAN		D-AL	LV-ENG	12	2/3/72	

PAGE 2 OF 2 APOLLO SATURN TEST AND OPERATIONS CATALOG (SHEET 2) I. NSC TEST NUMBER . TEST TITLE V-20111 SATURN IB VERIFICATION TEST AFTER LIGHTNING STRIKE > EFFECTIVITY AS-206 AND SUSS 12 63T. TCST T.ME 14. COMPUTER PROC. INDENTIFICATION IN LOCATION VARIABLE SEE LIST IN BLOCK 18 LC-39 16 SUPPORT REQUIREMENTS FACILITY COMMUNICATIONS (OIS) FACILITY TV (OTV) ALL STAGE POWER DEE-6 DDAS RCA-110A COMPUTERS FACILITY ECS COUNTCLOCK BACKUP BATTERIES LCC MEASURING (LVO) GSE MEASURING (LVO) 17. OTHER APPLICABLE REFERENCE DOCUMENTATION IS ITEM CONTINUATION COMPUTER PROGRAM IDENTIFICATIONS EAIC FT45 LA01 MTDI CTB2 FT06 FT25 OALR · QATO EALR LAF2 FT47 FT08 FT31 FESO OALS IASP EAPS LAPW FT49 FT10 FT35 FT03 OAPU TATC EAPU LAM2 FT55 FT04 FT20 FT37 EASS FT43 GT16 FT05 FT23 TEST REQUIREMENTS: (LV) TM-011-001-2H 13:0.1 THRU 13.3.1.4.3 Ant dist

KSC FORM 23-338C 1// 671.

KSC OPERATIONS APOLLO SATURN TEST AND OPERATIONS CATALOG SHEET	PAGE _1_OP _2
163 1766	V-20112
SATURIN 18 PAD MOSTLE LAUNCHER LOX AND FUEL LEAK CHECKS	AS-206 AND SUBS

A TEST CR. FCTIVES

TO VERIFY COMPLIANCE WITH LEAK REQUIREMENTS FOR THE MOBILE LAUNCHER LOX/FUEL FILL AD THE FACILITY VEHT SYSTEMS AND THE LHZ TRANS, ER AND VEHICLE VENT SYSTEM.

S TEST DESCRIPTION EQUIPMENT STATUS CONFIGURATION

DOES NOT CONTAIN MAZARDOUS OPERATIONS. THIS TEST & DOES

HAZAROS INCLUDE:

A. PERSCIEL WORKING AT HEIGHTS

B. IMERT ATMOSPHERES

S-IVE PROPELLANT AND VEHT LINES WILL BE PRESSURIZED UP TO THE VEHICLE INTERFACE. PRESS RIZATION WILL BE DONE USING GHE FROM "K" BOTTLES AND PURGE SUPPLIES. LEAK DETECTION WILL BE PERFORMED WITH LEAK CHECK SOLUTION, USON, MASS SPECTROMETER AND PRESSURE DECAY OBSERVATION. THE ML SYSTEMS WILL BE LEAK CHECKED FROM THE VEHICLE INTERFACES TO THE GROUND FACILITY INTERFACES.

S-IS LOX AND RP-1 FILL LINES WILL BE PRESSURIZED USING HELIUM AND GN2 RESPECTIVELY FPCM S-IB STAGE TANKS UP TO THE LOX DEBRIS VALVE AND RP-1 MAST CUTOFF VALVE. LEAK DETECTION WILL BE PERFORMED WITH LEAK CHECK SOLUTION AND MASS SPECTROMETER

DETECTED LEAKS WILL BE REPAIRED AND THEN RETESTED PER THIS PROCEDURE.

THE SHIVE TURBINE START BOTTLE AND PUMP SEAL BLEED VENT LINES WILL NOT BE CONNECTED TO THE VEHICLE, THE S-IVE GHZ VEHT LINE WILL REMAIN CONNECTED TO THE VEHICLE WITH THE VENT VALVE CLOSED. S-IVB SKID VALVES AND THE FILL & DRAIN VALVES WILL BE CLOSED A'D THE DEERIS VALVES OPEN.

THE S-IB LOX FILL & DRAIN VALVE WILL BE CLOSED, AFTER PRESSURIZATION, AND THE LOX DERRIS VALVE WILL BE CLOSED. THE S-IB RP-1 FILL & DRAIN VALVE WILL BE OPEN AND THE PP-1 MAST CUTOFF VALVE CLOSED.

KP-1 17-51 C	UTUFF VALVE CLC	SLU.		10.551
= 19/5/4	ASTP UPDATE	THE PARTY OF THE PARTY OF THE	The second	wews 9/5/14 1/6 , 5 6/12
0 7/5/73		ART BOTTLE & PUMP SEAL B	LEED LINES CHK.	115/3 Dr. Ruel
c 12/15/2		MAST LEAK CHECKS	of The	vens 1 04 Frak
B 9/12/2	CHANGE S-IVB F	EQUIREMENTS, ADD RD NUMB	ER S/J. D.	OWENS S/F. BRYAN
6 PEV. DATE	1	PEASON	Contracts	or Approval KSC Approval
S/U. D. ONE		5-8771	SEPT.	16, 1971
IG MASA PSC APPES	VAL	11. ORGANIZATION	12. APPROVA	LGATE
S/FPANK BRYA		LV-ENG	9/28/7	1
KSC PSPM 23 2/48 '7	671			The Control of the Co

APOLLO	SATURN TEST AND OPERATIONS CATALOG (SHEET 2)	PAGE 2 OF 2	
LITEST TITLE	V-20112		
SATURN IB P	SATURN IB PAD MOBILE LAUNCHER LOX AND FUEL LEAK CHECKS		
PAD B	14 COMPUTER PROC. INDENTIFICATION	40 HOURS	

16. SUPPORT REQUIREMENTS

KSC SAFETY MASS SPECTROMETER / OPERATOR FRE MEASUREMENTS LUT PNEUMATICS GROUND PNEUMATICS LCC POWER RD 28301

17. OTHER APPLICABLE REFERENCE DOCUMENTATION

18. ITEM CONTINUATION

5. TEST DESCRIPTION (CONTINUED)

LEAK CHECKS WILL BE PERFORMED AS FOLLOWS: S-IVB LH2 HEAT EXCHANGER VENT LINE S-IB LOX FILL LINE S-IB RP-1 FILL LINE S-IVB LH2 SKID AND S/A 6 LH2 & LOX FILL LINES ML LH2 TRANSFER LINES S-IVB LH2 SKID VALVE SEATS S/A 7 GH2 VEHICLE VENT LINE 5-IV TUBINE START BOTTLE & PUMP SEAL BLEED LINES UPON COMPLETION OF THE LEAK CHECKS, ALL SYSTEMS WILL BE VENTED AND CONFIGURED TO STANDBY CONFIGURATION.

TEST REQUIREMENTS

(LV) TM-011-001-2H NONE (S-IB) 60006050 NONE (S-IVB). 1886721 0.2.4.4 REQT, 2.1, 2.2 0.2.4.6 REQT, 1.6.1, 1.6.2, 2.1, 2.2 7921601 (UI) NONE

KSC FORM 23-338C 17:671

	APOLLO SATURN	KSC OPERATIONS TEST AND OPERATIONS CATAL	OG SHEET PAGE 1 OF 2	
TEST		1861 16 7 110 7	V-20113	
	SATURY IB SPECIAL	INFLIGHT LIGHTNING TEST	AS-210	1
4 TEST	SELECTIVES			-
. 5		WE THE SAFETY MARGINS INHERE	SERIES OF SIMULATED LIGHTNING ENT IN THE DESIGN OF CRITICAL	
S TEST	25324 PT 15 EQU PMENT	STATUS CONF DUPATION		-
THIS	TEST V. TOES	COES NOT CONTAIN HAZARDOUS	OPERATIONS	
1613		TOTAL TALL THE SAKOOOS		ger.
	HAZAPOOUS OPERATI	101.5:		200
	A. UMEILICALS ES	ECTED	The second	
	WILL BE RUN. THE INITIATION OF THE THROUGH COMMIT. TO COMMAND UMBILI UMBILIDAL DISCOMMAND WILL BE RETURATION, THE LAWN THE GSS AFTER LIFE FLIGHT COMPUTER WE SEQUENCE THROUGH	E COUNT WILL PROCEED NORMALL INFORMAND. THE TERMI LIFTOFF WILL BE SIMULATED BOOK AND WITHDRAWAL SECT. SERVICE APMS 1A, 6, 7 FRACTED A MINIMUM OF ONE (1) ICH VEHICLE WILL BE ELECTRIC TOFF, TO SIMULATE FLIGHT CONTILL PROGRAM THE LAUNCH VEHITIME BASE 1. THE TEST WILL AND THE LAUNCH VEHICLE WILL AND THE LAUNCH VEHICLE WILL	RIFIED. A PROPELLANT DISPERSION TES LY THROUGH "PREPARATIONS COMPLETE" A HIGHL COUNT SEQUENCE WILL PROCEED BY SERVICE ARM CONTROL SWITCH OPERAT L. LY ECS WILL BE TERMINATED AT 7 & 8 WILL NOT BE RETRACTED. SERVIC) FOOT. EXCEPT FOR PLUGS OUT CONFIG CALLY AND MECHANICALLY SEPARATED FRO VOITIONS AS CLOSELY AS POSSIBLE. TH CLE THROUGH AN ABBREVIATED FLIGHT L BE TERMINATED AFTER THE SIMULATED L BE POMERED DOWN BY DCS AND THE	IND FION EE
			TEST REQUIREMENTS: NONE	-
÷	175.4 ASTP UPS	ATE .	15 Queno 9/11/74 J. Bry	22
s				
REV.		PEASON	Contractor Approval KSC Appr	
	FAL F 1 5 / A -		9 DATE	ovel
, cont	- Guilles	W - 4850	June 26, 1974	oval
,1		The second secon	June 26, 1974	oval

APOLLO SATURN TEST AND OPERATIONS CATA	LOG (SHEET 2)	FASS_2_0F_2.
TEST TITLE	11 12	10 V-20113
SATURN IB SPECIAL INFLIGHT LIGHTNING	TEST	AS-210
VAB IALL, IATS		10 BAYS
SUPPORT REQUIREMENTS .		
GROUND POWER S-IB STAGE POWER S-IVB STAGE POWER IU POWER FLIGHT BATTERIES BACKUP BATTERIES COUNTDOWN CLOCK OAT EQUIPMENT LSE POWER LCC MEASURING (LVO) GSE MEASURING (LVO) DDAS	DDAS TAPE REC RCA 110A COMP LV W-G ECS LV ECS (GAS) LOCAL COMMANY (DRSCS & IL CIF IU RF STATION	CARRIER)
OTHER APPLICABLE REFERENCE COCUMENTATION		
	, x	

KSC FORM 29-338C (7/67)

TEST TITLE	K			
	SATURN TEST	SC OPERATIONS I AND OPERATIONS CATALOG SHEET	PAGE	_OF
			V-20114	P3
SATURE TE LA	SATURE TE LAUTCH VEHICLE PROPELLATT SIMULATED LOADING		S. EMPECTIVITY	
		and the second second second	AS-207 AND	SUSS
TEST DEJECTIVES			I HAMPING FOR	
TO VERIFY THE		LLANT SYSTEM WILL PROPERLY CONTROL VEHICLE,	. THE AUTOMATIC LO.	ADING
TEST DESCRIPTION		CLS CONFIGURATION	This series	7 (A.)
THIS TEST	023 . /2 04	JES NOT CONTAIN HALLER DOOS OF ENAFORMS		
		ILL SE OPERATED IN FILL, REPLENISH ITHOUT ACTUALLY TRANSFERRING LIQUI		
THE SIMULATE	LOADING OP	PRATION WILL BE RUN ONLY DURING MA	ALFUNCTION OAT AND	FRT.
THE PTCS WILL STAGE.	BE UTILIZE	D TO PROVIDE SIMULATED LIQUID LEVE	L INDICATIONS FOR	EACH
THE LAUNCH VI	HICLE WILL	BE LOCATED ON THE PAD AND ELECTRIC	ALLY MATED.	
TEST REQUIRE	ents.			
LV TM- 5-IB 600 5-IVB 15	-011-001-2H	NOTE 3.5.2.2, 3.5.2.4 NOTE		

LV-ENG

45: FORW 23.3168 - 61/

3/14/12

APOLLO SA	TURN TEST AND OPERATIONS CATALOG (SHEET 2)	FAGE 2 OF 2
TEST TITLE	N-30114	
SATURN IB LAUNC	1 CYPECTIC TY	
E. LOCATION	14 COMPUTER PROC. INDENTIFICATION N/A	AS-037 AND SIRS
LC-39 PAD B		
RCA 110A COMPUT LV POWER UP DTS_ DEE-3 PROPELLANT DC F PTCS	TER .	
LSE POWER UP		
RD-26031 '	EFERENCE COCUMENTATION	
7 OTHER APPLICABLE P	REFERENCE COCCUPANIA. ICV	
B. ITEM CONTINUATION		
See Apply 1 hours 1 hour		
		. He
Or a R. S.	The second secon	

KSC OPERATIONS APOLLO/SATURN TEST AND OPERATIONS CATALOG SHEET	PAGE 1 OF 2
C. FEST TITLE	V-20115
SATURN IB LAUNCH VEHICLE OPERATIONS FOR FACILITY POWER OUT TEST	AS-205. AND SUBS

4 TEST DBJECTIVES

THIS TEST WILL VERIFY THE CAPABILITY TO RESUME COUNT OR TO DRAIN CRYOGENIC PROFELLANTS FROM THE LAUNCH VEHICLE AND OTHERWISE SAFE AND SECURE THE LAUNCH VEHICLE AND GSE IN THE EVENT OF LOSS OF COMMERCIAL POWER TO LAUNCH COMPLEX 39:

S. TEST CESCA.PTION EQUIPMENT STATUS CONFIGURATION

THIS TEST TO DOES

DOES NOT CONTAIN HAZARDOUS OPERATIONS.

HAZARDOUS OPERATIONS:

(A) THE ML AD PTCR WILL BE PRESSURIZED. .

(3) LIQUID NITROGEN WILL BE HANDLED IN THE HGD SYSTEM.

THE TEST WILL BE CONDUCTED WITH THE SPACE VEHICLE AT THE PAD. ALL SPACE VEHICLE AND SUPPORT SYSTEMS ARE REQUIRED TO BE IN A SIMULATED T-2 HOUR LAUNCH COUNTDOWN CONFIGURATION AS CLOSELY AS POSSIBLE. THE LV PROPELLANT STRULATED LOADING TEST, VACUITY, WILL BE RUN WITH THE REPLENISH MODE HAS BEEN ESTABLISHED. ALL SYSTEMS AND EQUIPMENT WILL BE ELECTRICALLY LOADED WITH ACTUAL OR DUMMY LOADS, AND EMERGENCY GENERATORS RUNNING.

POWER FAILURES ON LCC, PAD A & B INDUSTRIAL AND INSTRUMENTATION BUSSES WILL BE SIMULATED. A MOMENTARY FAILURE WILL BE INITIATED TO TEST THE ABILITY TO RECOVER AND PICK UP COUNT AT T-2 HOURS, ALSO A QUICK RECOVERY OF THE 110A GROUND COMPUTER WILL BE INITIALIZED TO PROVIDE SUPPORT WITHIN 20 MINUTES AFTER THE FIRST OUTAGE. AN EXTENDED POWER OUTAGE (40 MINUTE) WILL BE INITIATED TO TEST THE CAPABILITY FOR RECOVERY AND SECURING ON EMERGENCY POWER, INCLUDING SAFING AND DRAINING OF THE LAUNCH VEHICLE.

AFTER POWER IS RESTORED, EACH USER WILL PROVIDE AN APPROXIMATE LOAD PROFILE OF EACH BUS TO CLES. * THIS PROFILE SHALL INCLUDE ACTUAL CURRENTS EXPERIENCED WHILE ON BACKUP BATTERIES DURING POWER OUTAGE, AND SHALL BE EXTRAPOLATED TO INDICATE CURRENT REQUIREMENTS FOR A TOTAL DRAIN.

TEST REQUIREMENTS:

				INCIAL
c	19/5/4	ASTP UPDATE		The Devens 1/1 1 1 Com
В	8/7/72	3 A DAG COA	RD NO., CHG.HAZ. OPERATI	ONS (Denens 4/8/2 10 10 6/24/72
A	5/17/72	ATIEMOM COA	RY POWER OUTAGE	S/J.D.OWEIS S/F.BRYAN
& DEV.	DATE		REASON	Contractor Approval KSC Approval
	RACTOR APP		5-8771	3/10/72·
	PANK BRYA		11. ORGANIZATION LV-ENG	12 APPROVAL DATE 3/14/72
KSC FOR	PW 22-3348 (7,	67,		

PAGE 2 01 2 APOLLO, SATURN TEST AND OPERATIONS CATALOG (SHEET 2) I ASC TEST NAMBER 1. TEST TITLE SATURN IB LAUNCH VEHICLE OPERATIONS FOR FACILITY POWER OUT TEST AS-106 AVC 5.55 14. COMPUTER PROC. NOENTIFICATION EAIC, EAPS, EASS, IASP, 15 EST. TEST TIME LC-39 PAD A & B LA01, OAPU, NT98, NT99 16. SUPPORT REQUIREMENTS 110A COMPUTER IV POWER UP : DTS DEE-3 PTCS PROPELLANT DC POWER LSS POWER UP BACKUP BATTERIES OTV OTV LIGHTING INDUSTRIAL WATER 17. OTHER APPLICABLE REFERENCE DOCUMENTATION V-20114 - LAUNCH VEHICLE PROPELLANT SIMULATED LOADING TEST 18 ITEM CONTINUATION

KSC FORM 23.338C (/, 67)

PAGE 2 5. 3

ASC "EST NUMBER V-20116

LS TEST TIVE 4 DAYS

AS-206 AND SUBS

2 54FECT-V.TY

APOLLO SATURN TEST AND OPERATIONS CATALOG SHEET	PAGE 1 OF 3
I TEST TITLE	V-20116
SATURN IB LAURICH VEHICLE PROPELLANT LOADING AND ALL SYSTEMS TEST	S EFFECTIVITY
TEST OBJECTIVES	AS-206 AND SUBS
2. TO DEMONSTRATE THE TIME PHASING OF COMPUTERIZED TEST AND PROGRAMS REQUIRED TO PREPARE THE LAUNCH VEHICLE FOR LAUNCH TO DEMONSTRATE ASILITY TO SAFE AND DRAIN THE LAUNCH VEHI	WCH.
E TEST CESCRIPTION EQUIPMENT STATUS CONFIGURATION	
THIS TEST TO DOES DOES NOT CONTAIN HAZARDOUS OPERATIONS.	
TEST OPERATIONS ARE CONSIDERED HAZARDOUS FOR THE FOLLOWING RE	ASONS:
1. RP-1 WILL BE LOADED	<u> </u>
2. PROPELLANT TANKS AND GAS STORAGE SPHERES WILL BE PRESSUR 3. HAZARCOUS ENVIRONMENTAL CONDITIONS MAY BE ENCOUNTERED	(IZED
4. CRYCGERIC LIQUIDS WILL BE LOADED	
5. HEAVY EQUIPMENT MOVEMENTS WILL BE REQUIRED	
CONFIGURATION CONTRACTOR CONTRACT	
THE LAUNCH VEHICLE MUST BE ON THE PAD WITH ALL PREREQUISITE T	TESTS COMPLETED.
TEST DESCRIPTION	
THE PROCEDURE WILL BE ORGANIZED AS FOLLOWS:	
	27310
1. PART 1 WILL COVER LAUNCH VEHICLE TANK PURGES & RP-1 LOAD	JING.

2. PART 2 WILL COVER BATTERY SIMULATOR INSTALLATION, LOX & LH2 SYSTEM PREPS, MSS MOVE TO PARK SITE, PROPELLANT TANKING COMPUTER SYSTEM PREPS, INDUSTRIAL WATER

PROPELLANT DISPERSION DEVICES AND NO S/A PRESSURIZATION.

REASON

5-8771 (TBC)

8 ORGANIZATION

I. ORGANIZATION

LV-ENG

(CONTINUED ON PAGE 2, SECTION 18).

10/27/21 I'CLUDE RP-1 DRAIN OPS . 1/10/73 DELETE MANUAL POWER XFER APPENDIX

TEST REPUIREMENTS: (SEE PAGE 3)

6 REV DATE

A CONTRACTOR APPROVAL

5/J. D. DWE'S

IC MASA-KSC APPROVAL

S/FRANK EPYAN

#SC FCRM 23-3368 17 07

ATTE PETE

SYSTEM PREPS, ELECTRICAL SUPPORT PREPS, VEHICLE CLOSEOUT AND OTHER SYSTEMS

PREPS REQUIRED TO SIMULATE A T-8 HOUR LAUNCH DAY LAUNCH VEHICLE CONFIGURATION. ALL ITEMS NOT COMPATIBLE WITH CRYOGENIC PROPELLANT LOADING WILL BE REMOVED. THERE WILL BE NO SPACESPAFT INTERFACES, NO ORDINANCE INSTALLATION EXCEPT INERT

Contractor Approval

FEB. 22, 1972

FEB. 29, 1972

12 APPROVAL DATE

STAC .

	R APPLICABLE REFERENCE COCIMENTATION
I Highway .	
IS ITEM C	CONTINUATION
TEST	DESCRIPTION (CONTINUED FROM PAGE 1, SECTION 5)
	THE THE ANGENT AND A ACCOUNT ADDRAFTION COME DOADS I SET LOSDING COCCIA
3.	PART 3 WILL COVER PAD CLOSEOUT OPERATIONS, CRYO PROPELLANT LCADING, SPECIAL CRYOGENIC TESTS AND THE TERMINAL COUNT SEQUENCE. FROM THE HOURS THROUGH
	INTERRUPTION OF THE TERMINAL COUNT SEQUENCE AT TIME FOR S-18 ENGINE IGNITION,
38	THIS PROCEDURE WILL RESEMBLE THE COUNTDOWN DEMONSTRATION TEST PROCEDURE, V-2011
	AS CLOSELY AS PRACTICAL. HOWEVER THIS PROCEDURE WILL NOT INCLUDE Q-BALL
	OPERATIONS, S/A 9 OPERATIONS, RETRACTION OF PRIMARY DAMPER AT COMPLETION OF
	PROPELLANT LOADING, SERVICE MODULE DELUGE PURGE SYSTEM CPERATIONS, HOLDDOWN ARM PRESSURIZATION, AUXILIARY PROPULSION SYSTEM PROPELLANT LOADING, ENGINE
- 3	SERVICE PLATFORM LOWERING, REMOVAL OF S/A CARRIER LOCKS, S/A TIP PRESSURIZATION
	ORONITE ABOARD THE S-IB STAGE, SPACECRAFT INTERFACES, S-IB THRUST CHANSER
1 10 1	JACKET PREFILL AND FLIGHT BATTERY INSTALLATION.

AND GUIDELINES FOR EVALUATION OF TCS ANOMALIES.

APOLLO SATURN TEST AND OPERATIONS CATALOG (SHEET 2)

SATURN IB LAUNCH VEHICLE PROPELLANT LOADING AND ALL

SEE PAGE 3

14 COMPUTER PROT INDENTIFICATION

DTS DEE-3

CCF

CIF

DDAS

TCE

CRYOGENIC PROPELLANT LOADING); RECYCLE OPERATIONS TO RETURN. THE LY TO A T-15

MINUTE OR T+8 HOUR CONFIGURATION; POST TEST SECURING OPERATIONS, RP-1 DRAIN;

DEE-6

110A COMPUTERS CM W-G ECS

SEARCHLIGHTS

SYSTEMS TEST

GROUND POWER S-IB STAGE POWER

16. SUPPORT REQUIREMENTS

S-IVB STAGE POWER

IU STAGE POWER

KSC PAD SAFETY

SECURITY POLICE

FIRE FIGHTING

MEDICAL

ETR RANGE SAFETY

LC-39B

KSC FORM 23-338C 17 871

SECO SATUR	TEST AN	S SPERATIO	NS CATALO	S SHEET (C	TAUNITHO	IOM SHEET	- NEC TREE NU	
UTUT IS L	AUID. VZ	HICLE PROP	ים הגעוד	EN CHICK	D ALL		V-20116 FFF VCT (CT)	
25 15 11 A		i i i		miná.	7/3/20			
CAPUTER P	OSPUM IS	ENTRICAT	ומו (כטודו	NUED FRO	M PAGE 2			
EE.7 CT 87.1 CT 0510 'EA	5 F. 5 F. 6 F. 6 F. 6 F. 6 F. 6 F. 6 F.	11 FT23 12 FT25 1- FT31 15 FT33 16 FT33	FT45 FT47 F149 FT55 GE01	IAAR IAEC IAEC IAAD IALU IALU IAMC	IAPX IARS IASP IATC IATS IZET IZEC	1281 12H5 LAF2 LAPW LAG1 LZTU MT01	NT98 NT99 OALB CALS OAPU OATO	
at motive							State State	
			TRUED FRO	de pace 1	SECTIO	v: 5)		
TEST RECVI			3.1 3.5	NUMBER BURGOOM	to the state of the same	No. of the last of	.0.1	
(5-12)	09202050	2.5.2.	3.1 2.2	444744	202000		RESERVED TO THE PARTY AT THE PARTY.	
		3.5.2. 3.5.2.	3.2 3.5	.2.5,2	3.5.2.6	.2 3.3	.6.4 .2.4 (ALL)	
		3.1.2.	3.2 3.5	.2.5,2	3.5.2.6	.2 3.3	.0.4	
		3.1.2.	3.2 3.5	.2.5,2	3.5.2.6	.2 3.3	.0.4	
		3.1.2.	3.2 3.5	.2.5,2	3.5.2.6	.2 3.3	.0.4	
		3.1.2.	3.2 3.5	.2.5,2	3.5.2.6	.2 3.3	.0.4	
		3.1.2.	3.2 3.5	.2.5,2	3.5.2.6	.2 3.3	.0.4	er e
		3.1.2.	3.2 3.5	.2.5,2	3.5.2.6	.2 3.3	.0.4	
		3.5.2.	3.2 3.5 3.3	.2.5,2	3,5,2,6	2 3.3	.0.4	
		3.5.2.	3.2 3.5 3.3	.2.5,2	3.5.2.b	2 3.3	.0.4	
		3.5.2.	3.2 3.5 3.3	.2.5,2	3.5.2.6	2 3.3	2.4 (ALL)	
		3.5.2.	3.2 3.5 3.3	.2.5,2	3.5.2.6	2 3.3	2.4 (ALL)	
		3.5.2.	3.2 3.5 3.3	.2.5,2	3.5.2.6	2 3.3	2.4 (ALL)	
		3.5.2.	3.2 3.5 3.3	.2.5,2	3.5.2.6	2 3.3	2.4 (ALL)	
		3.5.2.	3.2 3.5 3.3	.2.5,2	3.5.2.6	2 3.3	2.4 (ALL)	
		3.5.2.	3.2 3.5	.2.5,2	3.5.2.6	2 3.3	2.4 (ALL)	

Customer Cost Switch to reduce June 12 x

at the second days and the

KSC OPERATIONS APOLLO SATURN TEST AND OPERATIONS CATALOG SHEET	PAGE 1 OF 2
1. TEST TITLE	2. KSC TEST NUMBER V-20117
SATURN 18 LAUNCH VEHICLE OPERATIONS FOR LAUNCH VEHICLE OVERALL TEST \$1 (PLUGS IN)	AS-207 AND SUBS

A TEST DBJECTIVES

TO VERIFY COMPATIBILITY AND PROPER OPERATION OF ALL LAUNCH VEHICLE AND GSE SYSTEMS DURING FIRING AND FLIGHT SEQUENCES, WITH SIMULATLD UMBILITAL PLUG EJECTION AND SIMULATED LIFTOFF. THERE WILL BE TWO FLIGHT SEQUENCES, THE FIRST WILL VERIFY ITME BASE 2 IMHBIT. THE SECOND WILL VERIFY PROPER OPERATIONS OF THE LAUNCH VEHICLE THROUGH SIMULATED FLIGHT.

S TEST DESCRIPT ON EQUIPMENT STATES CONFIGURATION

THIS TEST TO, DOES DOES NOT CONTAIN HAZARDOUS OPERATIONS.

- (A) APPLICATION OF HYDRAULICS AND PREUMATICS
- (B) VENTING OF TAIKS
- (C) GIMBALI'S OF EIGHES

THE LAUNCH VEHICLE WILL BE ELECTRICALLY AND MECHANICALLY MATED ON THE ML, LOCATED AT PAD 8. THE TEST WILL BE CONDUCTED IN TWO PARTS. ALL APPLICABLE SYSTEMS OF THE LAUNCH VEHICLE, GSE WILL BE PREPARED AND COLDITIONS FOR PREPARATIONS COMPLETE WILL SE ACHIEVED. THE AUTOMATIC SEQUENCE WILL GENERATE STIMULI TO THE GSE THROUGH COMMIT AND SIMULATED LIFTOFF. UMBILICAL EJECTION, HOLDOOMN ARM RELEASE, AND SERVICE ARM RETRACTION WILL BE SIMULATED IN THE ESE. IN PART I: PRIOR TO START OF TERMINAL COURT SEQUENCE; THE DDP 224 DISPLAY COMPUTER WILL BE FAILED WITH SWITCHOVER TO ALTERVATE FIRING ROOM VERIFIED; A FORCE JUMP WILL BE INITIATED IN THE ML COMPUTER; AND AUTOMATIC RECOVERY WILL BE VERIFIED. ALSO THE 11CA ML MEMORY DRUM WILL BE POWERED OFF.

DURING L/V PLUS TIME, THE LVDC LOCK OUT CAPABILITY WILL BE DEMONSTRATED DURING S-12 BOOST.

PART I WILL BE PERFORMED WITH THE LYDC IN FLIGHT MODE AND WILL BE TERMINATED AT TIME

S/FRANK BRYAN			11. GRGAN-ZATION LV-EIG	12. APPHOVAL DATE 2/14/72	- year and a second
S/J. D. OWENS			5-2771, BATC	FEB. 2, 1972	
7 5341	PASTOR APP	DAVAL	B SPSAN. TATION	9 CATE	
s. REV.	DATE		PEASON	Contractor Approva	KSC Approval
A	8/16/72	ADD: MA15 E	PERIMENT & MSFC REQUIREME	NTS S/J.D. OWENS	S/F. BRYAN
В	11/3/72 UPDATE MSFC		REQUIREMENTS .	S/J.D. OXES	S/F. BRYAN
C	2/9/73	ALD COMPUTE	R PROGRAMS	S/J.D. OWENS	S/F. BRYAN
D	5/15/73	AS-207 CHLY	CHANGES .	of Downs	14 Flyen
E	5/12/73 REMOVE SC S		SUPPORT	9 Dowers of	
G	12/3/73 UPDATE MGF 7/11/73 EFFECTIVE T			\$ Dawes 7/11	1210617 - Omer
The same	1	ASTP UPDATE	C OFCUTTENENTS	Jacones 9/5	13. VIII . 37 h

APOLLO: SA	TURN TEST AND OPERATIONS	TATALOG (SHEET 2)	PAGE _2 _ CF _2
SATURN 1B VEHI	CLE OPERATIONS FOR LAUNCH	VEHICLE OVERALL	V-20117 ** ********************************
LC-39 PAD B	FE50, FTB1, FT06, FT10, FT2	- CE10, DT02, EAFS, EAF 3, FT27, FT37, FT42, FT45	13 HOURS
GROUND POWER S-IB STAGE POW S-IVB STAGE POW LCC DATA DISPL BACKUP BATTER! OAT EQUIPMENT LCC MEASURING CSF MEASURING	ER WER AY ES (LVO)	DDAS TAPE RECORDING MOBILE SERVICE STR RCA 110A COMPUTERS LOCAL COMMAND CARR TM RECORDS ALDS LCC TM STATION (MO LCC TM RECORDING DTS	UCTURE MEASURING

RD 25006

DDAS

17. OTHER APPLICABLE REFERENCE COCUMENTATION

18. ITEM CONTINUATION

ITEM 5 - TEST DESCRIPTION/EQUIPMENT STATUS/CONFIGURATION (CONT'D)

DURING RECYCLE TO PART II, THE GROUND COMPUTER SYSTEMS WILL BE RECOVERED. IN PART II, AFTER RECYCLE TO MINUS TIME, A COMPLETE FLIGHT MISSION WILL BE RUN. RANGE SAFETY COMMANDS WILL BE SENT TO CHECK THE RSCR SYSTEM.

ITEM 14 - COMPUTER PROC. IDENTIFICATION (CONT'D)

FT47,FT49,GE01,GT16, IAAR, IAFC, IALL, IAMC, IARS, IAPX, IATC, IATS, LAF2, LA01, LAPW, LZTU, NT98,NT99, OAPU, OAT1, EAIC, EASS

ITEM 5 - TEST DESCRIPTION (CONTINUED)

TEST REQUIREMENTS:

(LV) TM-011-001-2H 1.5.1 thru 1.5.2 7.0.1, 7.0.2,

(IU) 7921601

NULE

(S-IB) 60C0650

3.5.3.1.5, 3.5.4.1

(S-IVB) 1B86721

NONE

KSC FORM 23.338C 17/671

APOLL	O'SATURN TEST	OPERATIONS & AND OPERATIONS CATALOG SHEET	PAGE 1 OF 2
7557 71765			V-20118
SATURE: 18 M	BILE LAURICHER S	SLUG INSTALLATION	3 EFFECTIVITY
SEST OBJECTIVE	i ding ti dan	for the wife of the form	AS-206 AND SUBS
		S OR HIGHER RATED FUSES IN THE ETRIBUTOR, AND VISUALLY INSPECT	
TEST DESCRIPTION	ON EQUIPMENT STATUS	S CENTIS PATION	
THIS TEST	DOES X DOE	SHOT CONTAIN HAZARDOUS OPERATION	NS.
AD REPLACED RESULTING FR STAGE AND SY FUSES. ALL	WITH SLUSS OR ROW VIERATIONS DE	S CESIGNATED AS CRITICAL TO LAN FIGER PLATED FUSES TO PREVENT DURING THE PERIOD FROM IGHITION THE METHOD THE SETWORK DISTRIBUTORS WELLATION.	FUSE LINKS BREAKS THROUGH LIFTOFF. DESIGNATION OF CIRCUIT
Y		ANTIQUE TO THE TAXABLE OF	
	THE THE PARTY OF T	tradition fall three fire	HILL THE COURT OF
145 4 4			
	Service Control	rotus criezosas Park	
TEST REQUI	REFEITS:		
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		en e Men e mobiles	
	12 1		
alela	1 1	•	141 2 111 9/2
	ASTP UPDATE		Forms 15/4 J Byon
EV. CATE	ASTP UPDATE	REASON (8 CRGANIZATION	Contractor Approval KSC Approval
EV. CATE	10-60 1E	REASON S CASANIZATION 5-877/	Contractor Approval KSC Approval
	10-60 1E	8 SASANIZATION	Contractor Approval KSC Approval

TEST TITLE SATURI 1B MOBILE LAUNCHER SLIG INSTALLATION AS-205 AND S-SS DECATION MOBILE LAUNCHER IVA 10 SUPPORT REQUIREMENTS 17 OTHER APPLICABLY REFERENCE DOCUMENTATION 18 ITAM CONTINUATION				32
SATURN IB MOBILE LAUNCHER SELG INSTALLATION AS-206 AND SUSS 19. LOCATION IN TOWNSHEE BASE NO IN FICATION MOBILE LAUNCHER IN/A 16. SUPPORT REQUIREMENTS 17. OTHER APPLICABLE REFERENCE COCUMENTATION	APOLLO SATURN TEST AND SPERATIONS	CATALOG (SHEET 2)		1 - 1 - 1
MOBILE LAUTICHER N/A 16 SUPPORT REQUIREMENTS 17 OTHER APPLICABLE REFERENCE COCUMENTATION	ATURN IB MOBILE LAUNCER SLUG INSTALL		V-201	18
17. OTHER APPLICABLE REFERENCE COCLUENTATION	BILE LAUNCHER W/A	ATION		- 32
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	THER APPLICABLE REFERENCE DOCUMENTATION			
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				1

APOLLO SATURN TEST AND OPERATIONS CATALOG SHEET	PAGE 1 0F 2
TEST TITLE	- V-20119
SATURN IB BACKUP GUIDANCE SIMULATED FLIGHT TEST	AS-207 AND SUBS

 TO VEPIFY PPOPEP SPACECPAFT AND LAUNCH VEHICLE GUIDANCE INTERFACE OPERATION.
 TO VERIFY SPACECRAFT/LAUNCH VEHICLE GUIDANCE ELECTRICAL COMPATIBILITY AFTER A SIMULATED LY ATTITUDE REFERENCE FAILURE.

B TEST DESCRIPTION EQUIPMENT STATUS JOHF SURATION

THIS TEST DOES DOES NOT CONTAIN HAZARDOUS OPERATIONS.

A. GIMBALLING OF ENGINES 15 A HAZARDOUS CONDITION.

THE TEST WILL BE CONDUCTED IN THREE PARTS TO VERIFY THE FOLLOWING:

- PART I TILT AND ROLL SWITCHOVER CHARACTERISTICS THE POLARITY OF TILT AND ROLL COMMANDS FROM THE S/C GUIDANCE TO THE S-IB ENGINE ACTUATORS, ALONG WITH THE SIGNAL CHARACTERISTICS OF S/C GUIDANCE COMMANDS AT SWITCHOVER, WITH BOTH LV AND S/C COMMANDS BEING NON-ZEPO, ARE TO BE DEMONSTRATED IN A SINGLE RUN.
- PART II END TO END POLARITY TEST THE POLARITY BETWEEN THE COUPLING DATA UNITS AND THE S-IB ENGINE ACTUATORS WILL BE DEMONSTRATED BY SIMULATED TORQUING OF THE IRIGS BY MEANS OF A SPECIAL K-START TEST PROGRAM.
- PART III SIMULATED FLIGHT

 PLUS TIME SEQUENCE TEST OBJECTIVES THE PURPOSE OF THIS TEST IS TO VERIFY

 THE BACKUP GUICANCE COMPATIBILITY BETWEEN THE SPACECRAFT AND LAUNCH VEHICLE.

 IMMEDIATELY AFTER LIFTOFF AND DURING THE FIRST BOOST PHASE OF THE FLIGHT,

 A LAUNCH VEHICLE ATTITUDE REFERENCE FAILURE WILL BE SIMULATED. THE SINGLE

 SYSTEM FAILURE WILL BE SIMULATED PRIOR TO LVDC TIME-TILT PROFILE GENERA
 TION AND IN SUFFICIENT TIME TO VERIFY PROGRAM LOCKOUTS OF ATTITUDE REFER
 ENCE SWITCHOVER. DURING THE S-IB BURN MODE, S/C CONTROL WILL BE ENABLED,

 THE S/C CONTROL OF SATURN SWITCH WILL BE PLACED IN THE CMC POSITION, AND

 ROLL AND PITCH ERROR SIGNALS WILL BE GENERATED BY THE S/C GUIDANCE POLY
 NOMINAL. DUFING THE S-IVB BURN AND COAST MODES, MANUAL CONTROL OF SATURN

 WILL BE INITIATED AND HAND CONTROL CHECKS WILL BE PERFORMED. THE RESPONSE

 AND NON-RESPONSE OF THE LAUNCH VEHICLE TO MCC-H WILL BE VERIFIED, BOTH IN

 HINCS TIME AND CURING THE SIMULATED FLIGHT.

<u>c</u>	115/4-	ASTP UPDATE			Jamens 1/5/4/	J Emm
Б	5/30/73	ASS HELT PART	TICIPATION.		Ja Owens 1/3	Francy
*	1/31/73	ADD MSFC REC,	, UPDATE COMPUTER PROG LI	IST	S/J.D.OWENS	S/F.BRYAN
6 8EA.	-		REASON	T. T. T.	Contractor Approvel	KSC Approval
	J. D. OME		5-8771	100	SEPT. 2, 1971	
	FRANK BRI		LV-ENG		APPROVAL DATE	

APOLLO SATURN TEST AND OFERATIONS CATALOG ISHEET 2" F1:5 _ 6 . CF V-20119 SATURN IB BACKUP GUIDANCE SIMULATED FLIGHT TEST * cr. + 21 4. ** 45-207 AND SUBS EAIC EAPF EAPS EAS 13 LOCATION FT06, FT10, FT20, FT23, FT42, FT49, FTE1, GT16, IAAR, 7 401185 LC-39 16. SUPPORT RESINARY LATE GROUND POWER S-IB STAGE POWER LCC MEASURING (LVO) S-IVB POWER LCC DATA DISPLAY IU POWER DDAS SM POWER DDAS TAPE PECORDING BACKUP BATTERIES SERVICE STRUCTURE MEASURING RCA 110A COMPUTERS COUNTDOWN CLOCK OAT EQUIPMENT DFE-6 LCC TM STATION (MONITOR) DEE-3 CM POWER LCC TH RECORDING GMIL RD 26006 HFLT

18. ITEM CONTINUE TION

14. COMPUTER PROC. IDENTIFICATION (CONTINUED)

IAFC, IALL, IAMC, IAPX, IATC, IATS, LA01, LAF2, LAPW, NT98, NT99, OAPU, OAT1, CE10, FE50, FT27, FT37, GE01, LZTU, ZT96, FT55, FT47, FT45

5. TEST DESCRIPTION (CONTINUED)

17. OTHER APPLICABLE REFERENCE DOC MENTATION

TEST REQUIREMENTS:

(LV) TM-011-001-2H 1.1.1.2, 1.1.1.3, 1.1.1.4.1, 1.5.1 THRU 1.5.2, 7.0.1, 7.0.2

(IU) 7921601 0.3.5.2.5.3, 0.3.7.1.4

KSC FORM 23.338C / 671

KIC CPERATIONS PAGE 1 OF 2 ALLES SAYURN TEST AND OPERATIONS CATALOG SHEET A JUST A STOLE THE PARTY IS FOR FLIGHT REPORTED THE 4 -- 29 AVA SUBS THE AND THE RESERVE OF THE PROPERTY OF A PROPERTY OF AN INCAP. AS POSSIBLE TO LAURCH CONTIGURATION, A. TOTATION A PROPERTY WITH UPLATED WITH WELL THE PAR GSE. 1 7417 18714 87 14 41 846 47 27 - 122 124 125 27 27 24 THE TEST 1 10085 1 LOES NOT CONTAIN HAZARDOUS OPERATIONS. -ATRACO . TORREST TO LE TA, AMOUNTED A SERVENCING MA PENWICS Ca. BUILDING TAKES (C) girts in the main s THE RESTOR OF THE PROPERTY OF THE PARTY OF T THE THE PARTY OF THE REPORT OF WIND AND THE CAT FOLIPHENT REQUIRED FOR PARTITION OF THE TANK OF THE PARTY OF TO JUNE OF MALE WAS EXPRESSED A PUBLIC PRATICION MISSION SIMULATION. PROPELLANT LOSSING WILL SE STRUCKATED IN THIS TEST. QUESTION, SEPTIME, SEPTIME ARM RETRACTION, WILL SE STANDARD PROPERTY. MASS RETRACT CREATERS WILL SE STANDARD WATER VALUE OF PARTY. BATHS SEACON TRANSPORCET AND 10 CRITICAL BECCEIVERS WILL BE INTERROGATED AND READ OUT E PAINE AERATIONS OF ID STATIONS. HE A TOTAL COMMENT OF THE ACT ACCESSFETY COMMENT TO SHIB ME SHIVE WILL BE 1. 1832 m. 9 . 2. 15 T. 3. . . Transfer all Son 12 Come 3 7/2 Line of the late of the second 15 Some Sais 1 flager Large good and a second property of the READON Contractor Approval | KSC Approval A 1. 1544 141 54 126-2,1472 5-1771 34.1 12 APPROVAL CATE SHEAR ZATION 2/14/72

SATURN IB LAUNCH VEHICLE OPERATIONS F	FOR FLIGHT READDESS DEST	V-20110
LC-39 PAD B (SEE BLOWN 18)	CATION	AS-209-AG SU69 7-7-7-7-7-7-1 16-7-7-7-8
SOFFDAT RECUREMENTS GROUTED POWER S-IB STAGE POWER S-IVB STAGE POWER IU POWER SM POWER BACK-UP BATTERIES COMITDOWN CLOCK OAT EQUIPMENT DEE-5 CM POWER DTS LCC MEASURING (LVO) LCC DATA DISPLAY DDAS	DRAS TAPE RECORDING SLRINES STRUCTURE N ROA 111A COMPUTERS 187-0 LOO IM STATION (MON LOO IM STATION (MON LOO IM RECORDINA USB STA 100 (MIL) CIF (CATA CORP MON RANGE ROAR (C-BAND RANGE COMMAND RACAF RO 05601	(100) (E =() (

EAIC F104 FT27 EAPF FT06 FT33

14. COMPUTER PROC. IDENTIFICATION

EAPS

EASS

FL50

FTB1

5. TEST DESCRIPTION (CONTINUED)

FTCS

FTIC

F723

F723

FT35

FT37

F145

FT47

FT49

FT:55

TEST REQUIREMENTS

BE 03

BTUI

EADS

LV	TM-011-001-2H	1.1.1.2, 1.1.1.3, 1.4.1.1, 1.4.1.2, 1.5.1 T-RU 1.5.2.2-2.0.1.1, 2.0.1.2, 2.0.1.3, 2.0.1.4, 1.1.1.4.1, 1.5.1,
IU	7921601	2.3.1.5, 2.0.1.6, 7.0.1, 7.3.2, 0.3.4.2.3.2, 0.3.7.1.3, 0.3.5.2.2.3.2, 0.3.5.2.2.3.1
S-IVB	1886721	0.3.4.0.1 NOTE
S-1B	60006050	NOIS THE STATE OF

FU01

GEOL

G715

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127

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1435

LATO

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L424

ENG FRANCE STAFF IT A

OATO CASB

MSC OPERATIONS
APOLLO/SATURN TEST AND OPERATIONS CATALOG SHEET PAGE 1 OF 2 V-20126 TEST TITLE EFFECTIVITY LY COUNTDOW: SIMULATION: SIMULATOR

4 TEST GBJECTIVES

TO VERIFY MAINTAIN LY FIRING ROOM CREW PROFICIENCY.

S TEST DESCRIPTION EQUIPMENT STATUS CONFIGURATION

THIS TEST __ DOES ___ DOES NOT CONTAIN HAZARDOUS OPERATIONS.

THIS TEST WILL SIMULATE IN THE LCC THE TERMINAL PORTION OF THE LV COUNTDOWN THE LCC PURCTUOS WILL BE DYNAMICALLY SIMULATED BY USE OF THE LV SIMULATOR.

GILY THE LCC FACILITIES ARE REQUIRED. ML, LV, AND PAD SYSTEMS ARE NOT REQUIRED.

THE FIRING ROOM AND COMPUTER COMPLEX WILL BE CONNECTED TO THE LY SIMULATOR.

TEST REQUIREMENTS:

				10	44 1 75 1 4 4 4	
8	19/5/4	ASTP PSATE	•		1 KT was 9/5/74	it digen
A	3/7/74	PROGRAMS FOR	LVOS .		Fileneus 18/4	1 4 auro 4
					100	1
6. REV.	DATE		REASON		Contractor Approval	KSC Approval
7 CON	to Ou	PROVAL	5-877/		Sept 18, 197	z .
0	- Claces	mans	LU-OMO3		Sept 27,	1972
SE FO	aw . 1 1-10 '7	. 4.1		All Control of the Co	7	

APOLLO	SATURN TEST AND OPERATIONS CATALOG (SHEET 2)	FAST 2 3 2
LY COUNTDOWN	SIMULATION	V-20106
LC-39	(SEE ITEM 18 BELOW)	4 HOURS

XDS-930 COMPUTER (601 AND 604) LCC-RCA 110A COMPUTER LAB-RCA 110A COMPUTER COUNT CLOCK COUNT CLOCK DISPLAYS DDAS 015 OTV SIMULATION

TO OTHER APPLICABLE REFERENCE DOCUMENTATION

14.	COMPUTER	PROC:	IDENTIFICATION
	_	- Company of the last	the same of the sa

3 ITEM CONTINUATION

	BE02	EADS	FT42	IALK	
	BE03	FE50	FT43:	IAMC	
	BT01	FTB1	FT45	IAPX	
	CE10	FT03	FT47	IARS	
	CTB1	FT05	FT49	IASC	
	CTB2	FT06	FT55	IASL	
	CTB7	FT10	GE01	IATC .	
	CTC3	FT20	GT16	I.ATS	
	CTC4	FT23	IAAR	LAPW	
	CTC5	FT31	IAED	LZT4	
		FT37	IAFC	CALB	
•			IALL	CALS	
				CAPU	

KSC FORM 23.3780 : 67.

KSC GPERATIONS APOLLO/SATURN TEST AND OPERATION	CATALOG SHEET	AGE _1OF2
1. FEST TITLE		EST NUMBER 20127
SATURN S-18 RP-1 LOADING OPERATIONS		206 AND SUBS
4. TEST OBJECTIVES		

TO TRAISFER RP-1 TO THE S-IE STAGE.

S TEST CESCRIPTION EQUIPMENT STATUS CONFIGURATION

THIS TEST 77. DOES DOES NOT CONTAIN HAZARDOUS OPERATIONS.

HAZAPOS INVOLVE FLAYMABLE FUEL HANDLING.

ALL VEHICLE AND ACTIVE GSE SYSTEMS INVOLVED IN RP-1 LOADING MUST BE IN LOADING CONFIGURATION AND READINESS.

AN OIS VERIFICATION WILL BE MADE THAT ALL ASSOCIATED SYSTEMS AND ORGANIZATIONS ARE READY TO SUPPORT THE OPERATION.

THE SHIB STAGE FUEL TACK WILL BE LOADED TO A LEVEL CONSISTENT WITH STAGE REQUIREMENTS.

TEST REQUIREMENTS

(S-IB) 60006050 3.3.0.1, 3.5.2.5.2, 3.5.2.6.2

(MSFC) TM-011-001-2H 11.0.2, 11.0.3, 12.0.1

2 19/5/4 ASTR UPCATE	Marriens 4/5/44 to & Bylace
C 11/30/3 PEVISE TEST PEQUIPEMENTS	Frank John Jales
ADD RD, ADD LEE-3 & DTS; ADD CON	
A 8/10/72 TO ADD TEST REQUIREMENTS	8/11/72 8/15/72 S/L.R.CORBRIDGE S/F.BRYAN
FEASON CONTRACTOR APPROVAL S/J. D. CHENS 5-8771 THE BOETS	Convector Approved KSC Approved DATE G COMPANY APRIL 17, 1972
S/FRAX BPYAL LV-ENG	12. APPROVAL DATE 5/19/72

APOLLO SATURN TEST AND OPERATIONS CA	TALOG (SHEET 2)	FACE _2	Jr
TEST TITLE		V-20127	1 d
SATURN S-IB RP-1 LOADING OPERATIONS		AS-206 AND	
LC-39 PAD B BE01,8E02,8T01		18 . 2	I.
SUPPORT REQUIREMENTS		100	
RD 26230 KSC PAD SAFETY	S-IB STAGE POWER HP GAS		
FIRE FIGHTING DDAS TAPE RECORDING	DEE-3 DTS (PROPELLANTS)		
DDAS RCA-110A FRE MEASUREMENTS FACILITY COMM. (OIS)			
OTV SURVEILLANCE CAMERAS GROUND POWER			
OTHER APPLICABLE REFERENCE COCUMENTATION		-	
		garaga garag Baraga garaga garag	
ITEM CONTINUATION			
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APOLLO SATURN TEST	C OPERATIONS CATALOG SHEET	PAGE 1 OF 2
TEST TITLE		2. KSC TEST NUMBER
	ISH & LEVEL ADJUST OPERATIONS	V-20128
SAIGHT S-IB RP-I REPLIN	ISH & LEVEL ADOUST GPERATIONS	
TEST DBJECTIVES		AS-206 AND SUBS
TO PERFORM REAL REPLEMISH COST AS LAURCH COUNTDOWN	AC LEVEL ADJUST OPENTIONS TO	SUPPORT
TEST SESSER PTION EQUIPMENT STATU	S CONFIGURATION	
THIS TEST THE COES DOS	ES NOT CONTAIN HAZARDOUS OPERATIO	NS.
HAZAPOS INNOLVE FLANMABLE	FUEL HAIOLING.	
ALL VEHICLE AND ACTIVE GSI CONFIGURATION AND READINES	SYSTEMS INVOLVED IN RP-1 LOAD	ING MUST BE IN LOADING
AN CIS VERIFICATION WILL S APE READY TO SUPPORT THE C	RE MADE THAT ALL ASSOCIATED SYS OPERATION.	TEMS A'D ORGANIZATIONS
THE PEPLENISH SEQUENCE IS AN ACCURATE LEVEL ADJUST I	USED TO INSURE A SUFFICIENT QUERAIN.	ANTITY OF RP-1 TO PERFORM
	IS USED TO GRAVITY DRAIN THE S DA THE S-IB RP-1 TANKING COMPUT	
TEST REQUIREMENTS:		
(S-IS) 60C06050	3.3.0.1	
(5-15).	7.7.0.4	
(LY) 7:*-011-901-2H	12.6.1	
(L7) 7:*-011-G01-2H		
		Themas 9:570 -1- Fam
(LV) TM-011-Q01-2H 2 7/2/4 ASTR LEDATE C 11/31/3 ASD LV TEST F	12.C.1	The stant of the stant of the
(LY) T: -011-Q01-2H 2 7/5/4 ASTR LPDATE 2 11/31/3 ADD LY TEST F ALO COP. PR	12.C.1	
(LY) T:-011-Q01-2H 2 7/2/4 ASTR LPDATE C 11/31/3 ASD LY TEST F	TEC.IFE"ENTS JEG., ADD DEE-3 & DTS	FT Style Thousands

11 SPSANIZATION

LV-ENG

12. APPROVAL DATE

KSC FORM 23-338C 17/871

5/19/72

IS MASA-KIS APPROVAL

KSC FCRW 18-2388 7 67,

S/FRACK BRYAN

APOLLO SATURN TEST AND OPERATION	S CATALOG (SHEET 2)	PAGE 2 07 2
SATURN S-IB RP-1 REPLENISH & LEVEL A	DJUST OPERATIONS	V-20128
LC-39 PAD B BE02, BE03	CATION	AS-206 AND SUBS
RD 26231 KSC PAD SAFETY SECURITY POLICE FIRE FIGHTING DDAS TAPE RECORDING DDAS RCA-110A F&E MEASUREMENTS FACILITY COMM. (OIS) OTV SURVEILLANCE CAMERAS GROUND POWER	S-IB STAGE POWER HP GAS DEE-3 DTS (PROPELLANTS	
7. OTHER APPLICABLE REFERENCE DOCUMENTATION		
ITEM CONTINUATION TO THE THE STATE OF		

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KSC OPERATIONS APOLLO/SATURN TEST AND OPERATIONS CATALOG SHEET	PAGE 1 0F 2
1 TEST TITLE	V-20129
SATURN S-IB RP-1 DRAIN OPERATIONS	AS-206 AND SUBS

4 TEST GBJECTIVES

TO PRESSURE DRAIN RP-1 FROM THE S-IB STAGE.

S TEST DESCRIPTION EQUIPMENT STATUS CONFIGURATION

THIS TEST TO DOES DOES NOT CONTAIN HAZARDOUS OPERATIONS.

HAZAROS INVOLVE FLANVABLE FUEL HANDLING.

ALL VEHICLE AND ACTIVE GSE SYSTEMS INVOLVED IN RP-1 DRAIN MUST BE IN DRAIN CONFIGRRATION AND READINESS.

AN OIS VERIFICATION WILL BE MADE THAT ALL ASSOCIATED SYSTEMS AND ORGANIZATIONS ARE READY TO SUPPORT THE OPERATION.

THE S-IB PP-1 DRAIN SEQUENCE WILL BE PERFORMED FOR EMERGENCIES AND SPECIAL TESTS OFLY. THE DRAIN SEQUENCE WILL SE A PRESSURE DRAIN USING FLIGHT PRESSURE IN THE FUEL TAWKS ALLOWING THE FUEL TO DRAIN BACK TO THE STORAGE TAWKS.

FOLLOWING THE STAGE DRAIN THE TRANSFER LINE WILL BE EMPTIED OF RESIDUAL RP-1.

TEST PEQUIPEMENTS:

HOE

3	4/5/4	ASTP UPDATE		Januar 9/5/	14 1/11/2 JEnn
6.	10/25/2		S., ADD RD, ADD DEE-3 & DTS	\$1. Gwens 10/26/	2 19th Front /1
S. PEV.	DATE		PEASON	Contractor Approval	KSC Approval
	J. D. ON		5-8771 THE BOEING COMPANY	PFIL 17, 19	72
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	FRANK BR		LV-ENG	5/19/72	

APOLLO SATURN TEST AND OPER		
		V-20129
SATURN S-IB RP-1 DRAIN OPERATIO		A5-206 AND SUBS
LC-39 PAD B BE02, BT01	ENTIFICAT DN	TBO
RD 26232 KSC PAD SAFETY SECURITY POLICE FIRE FIGHTING DOAS TAPE RECORDING DOAS RCA-110A F&E MEASUREMENTS FACILITY COMM. (OIS) OTV SURVEILLANCE CAMERAS GROUND POWER S-IB STAGE POWER HP GAS	DEE-3 DTS (PROPELLANT	(5)
OTHER APPLICABLE REFERENCE DOCUMENTATION	CN	The last reason with the second
ITEM CONTINUATION		

KSC FORM 23.538C .. 67/

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KSC OPERATIONS APOLLO SATURN TEST AND OPERATIONS CATALOG SHEET	PAGE 1 OF 4
* * *ELT TITLE	V-20130
SATURN IS LAUNCH VEHICLE OPERATIONS IN SUPPORT OF SPACE VEHICLE COUNTDOWN DEMONSTRATION TEST AND LAUNCH COUNTDOWN	AS-209 AND SUBS
4-TEST DEJECTIVES	

- 1. TO DEMONSTRATE, IN CONJUNCTION WITH APOLLO SPACECRAFT OPERATIONS, THE TIME PHASING OF THE SEQUENCES NECESSARY TO PREPAR. THE LAUNCH VEHICLE FOR LAUNCH.
- 2. TO DEMOISTRATE THE TIME PHASTING OF COMPUTERIZED TEST AND CHECKCUT PROGRAMS REQUIRED TO PREPARE THE LAUNCH VEHICLE FOR LAUNCH.
- 3. TO VERIFY THAT THE LAUGH VEHICLE AND THE GROUND SUPPORT EQUIPMENT ARE IN A STATUS TO SUPPORT LAUGH COUNTDOWN.

(CONTINUED ON PAGE 2, SECTION 18)

S TEST DESCRIPTION EQUIPMENT STATUS CONFIGURATION

THIS TEST X DOES

TOGES HOT CONTAIN HAZARDOUS OPERATIONS.

CDCT & CD CPERATIONS ARE CONSIDERED HAZARDOUS FOR THE FOLLOWING REASONS:

- 1. RP-1 WILL EE ON ECAPO
- 2. PROPELLANT TANKS AND GAS STORAGE SPHERES WILL BE PRESSURIZED.
- 3. HAZAPDOUS EINTROJETTAL CONDITIONS MAY BE ENCOUNTERED.
- 4. CRYOGENIC LICUIDS WILL BE LCADED.
- 5. HEAVY EQUIPMENT MOVEMENTS WILL BE REQUIRED.
- E. THE FLIGHT CREW WILL INGRESS AND THE HATCH WILL BE CLOSED.
- 7. LIVE CRIMICE WILL BE INSTALLED AND CONNECTED.
- 8. BIGINE IGNITION WILL OCCUR.

CONFIGURATIO:

THE LAURCH VEHICLE MUST BE ON THE PAD WITH ALL PREREQUISITE TESTS COMPLETED.

TEST DESCRIPTION (SEE PAGE 2, SECTION 18)

TEST REDUIREMENTS (SEE PAGE 3

H 197574 LETTE 1996		Jubina 1/5/2 3 Agon
G 11/20/3 TEST REC	JI KEVE: TS	SHEATERS From 12hg
K PE / DATE	PEASON	Consector Approval KSC Approval
5/J.L. 0.E.S	5-8771	FEB. 22, 1972
S/FRAU. BRYAL	LV-ENG	FEB. 29, 1972

지나 나 이 가는 열등로 가져가 되어 있다면 하나 있다. 그는 이 이 그는 그를 가지 않는 것이 없는 것이다.		FASE 2 OF 4	
1. TEST TITLE	***************************************	V-20130	
SATURN 18 LAUNCH VEHICLE OPERATIONS IN SUPPORT OF SPACE VEHICLE COUNTDOWN DEMONSTATION TEST AND LAUNCH COUNTDOWN		AS-209 AND SUBS	
15. LOCATION 14 COMPUTER PROC. INDENTIFICATION LC-398 SEE PAGE 3		4 DAYS PLUS HOLDS	

16. SUPPORT REQUIREMENTS

SD/RD 25000 GROUND POWER S-1B STAGE POWER S-1VB STAGE POWER IU STAGE POWER ETR RANGE SAFETY KSC PAD SAFETY SECURITY POLICE FIRE FIGHTING MEDICAL PROPELLANTS DC POWER
PTCS (ALL SYSTEMS)
DTS
DEE-3
DEE-6
110A COMPUTERS
CM W-G ECS
CCF
CIF
SEARCHLIGHTS

7. OTHER APPLICABLE REFERENCE DOCUMENTATION

S/V PROCEDURE 40400 LMRD K-1B-02.10 ETR OD 25000 S/C PROCEDURE K0007

TCE

SIV SCRUB TURNAROUND 40400

18. ITEM CONTINUATION

TEST OBJECTIVES (CONTINUED FROM PAGE 1, SECTION 4)

- 4. TO PROVIDE THE CAPABILITY TO SAFE AND DRAIN THE LAUNCH VEHICLE IF NECESSARY.
- 5. TO PREPARE THE LAUNCH VEHILCE FOR LAUNCH
- 6. TO LAUNCH THE SPACE VEHICLE

TEST DESCRIPTION (CONTINUED FROM PAGE 1, SECTION 5)

- A. THE TOTAL PROCEDURE IS DIVIDED INTO THREE VOLUMES AS FOLLOWS:
 - VOLUME I WILL INCLUDE TANK AND FACILITY PURGES, ORDNANCE INSTALLATION AND CONNECTION, DIGITAL RANGE SAFETY COMMAND SYSTEM TESTS AND SERVICE ARM PRESSURIZATION.
 - VOLUME II WILL INCLUDE FLIGHT BATTERY INSTALLATION, ACCESS KIT REMOVAL, LAUNCH VEHICLE FINAL CLOSEOUT OPERATIONS, MSS TRANSFER OPERATIONS, CRYOGENIC PROPELLANT LOADING, AND THE TERMINAL COURT SEQUENCE. APPRIOLES WILL INCLUDE SAFING PROCEDURES, DRAIN OPERATIONS, CONTINGENCY PROCEDURES AND RECYCLE OPERATIONS.
 - 3. VOLUME III WILL INCLUDE GUIDELINES FOR EVALUATION OF ANOMALIES WHICH MIGHT OCCUR DURING THE TERMINAL COUNT SEQUENCE (TCS). THIS VOLUME CONTAINS A DESCRIPTION, FOR EACH TCS SEQUENCE, OF THE POTENTIAL SIGNIFICANCE OF THE ANOMALY, THE STATION(S) RESPONSIBLE FOR ACTION, THE ACTION TO BE TAKEN AS THE RATIONALE FOR THE PRESCRIBED ACTION.

KSC FORM 23-336C (7/67)

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APOLLO SATURM TEST AND OPERATIONS CATALOG SHEET (CONTINUATION SHEET)	Yace 3 OF 4
SATURN IB LAWICH VEHICLE OPERATIONS IN SUPPORT OF SPACE	V-20130
VENICLE COUNTDOWN DEVENISTRATION TEST AND LAUNCH COUNTDOWN	AS-209 AND SUBS

TEM CONTINUATION

#31 FC#W 12300 7 97

TEST DESCRIPTION (CONTINUED)

B. TEST CUPARISCIS

IF A COUNTDOWN DEPONSTRATION TEST IS PERFORMED, THE SEQUENCE OF OPERATIONS WILL BE THE SAME AS THE LAURCH COUNTDOWN WITH THE FOLLOWING MAJOR EXCEPTIONS:
LAURCH MEHICLE BATTERIES WILL NOT BE INSTALLED; PROPELLANT DISPERSION
DETALATORS, PRIMACORD, HOLDDOWN ARM ORD MILE AND SOLID PROPELLANT GAS
GENERATOR INITIATORS WILL NOT BE CONNECTED; THE FLIGHT CREW WILL NOT INGRESS
THE SPACEGRAFT; AND THE TERMINAL COUNT SEQUENCE WILL BE INTERRUPTED AT
TIME FOR SHIB ENGINE IGNITION. FOR LAUNCH COUNTDOWN THE TERMINAL COUNT
WILL PESULT IN LAUNCH OF THE SPACE VEHICLE. OPERATIONS TO SECURE GROUND
SUPPORT EQUIPMENT AFTER LAUNCH WILL BE INCLUDED.

COMPUTER PROGRAM IDENTIFICATION (CONTINUED FROM PAGE 2, SECTION 14)

				ALL DE		والمتال فتعالم الأ		Programme.			1000
EEG2	CT37	EAS5	FT03	FT20	FT37	FT55	IAAR	IALL	IATC	1Z33	NT98
5503	CTC3	EADS	FT04	FT23	FT42	GE01	IAED	IAMC	IATS	LAF2	NT99
BTG1	CTC4	EARS	FT05	FT25	FT43	GT16	IAES	IAPX	IZEA	LAPW	CALB
CTEI	CTC5	EAPU	FT06	FT31	FT45		IAFC	IARS	IZRE	LA01	OALS
CTB2	EAIC	FE SO	FT10	FT33	FT47		IAL	IASL	IZSA	LZTU	OAPU
CEIO	5.10			FT35	FT49			IASP	· -	_MT01	QATO :
						-					ZT96

APOLLO SATURN TEST AND	DPERATIONS CAT	ALOG SHEET (CO.	TINDATION SHEE		4 OF 4
SATURN IB LAUNCH VEHI VEHICLE COUNTDOWN DEM	CLE OPERATIONS ONSTRATION TES	IN SUPPORT OF	F SPACE COUNTDOWN	V-2013	0
ITEM CONTINUATION				ranjologa, je Slativa je	
TEST REQUIREMENTS:	(CONTINUED	FROM PAGE 1,	SECTION 5)		
(S-INB) 60C06050 (S-INB) 1B86721 (1U) 7921601	3.2.1.2 3.2.2.3 3.2.5.3.6 0.2.5.1.2.0 0.2.5.4.1.1 0.2.5.2.3.1	0.2.5.4.1.2 0.2.5.4.1.3 0.2.5.2.3.2 1 0.3.4.1.1 0.3.5.3.1	5.6.1.1.2 3.6.1.3.1 5.6.1.3.2 0.2.5.4.1.4	3.6.2.1 3.6.2.2 3.5.4.1 .1.1 0.2.	3.7.2.21.4 3.6.2.3 5.4.3.6(ALL) 3.5.2.7
(LV) TM-011-001-24	1.2.3.2	1.4.2	4.0.1 9.0.1.3 9.0.1.4 10.0.1 10.0.1. 10.0.1.	13.0.1 14.0.3 14.0.4 1 14.0.4 2 14.0.4	.1 .1.1

KSC FORM 28-3360 17/67

APOLLO SATURN	KSC OPERATIONS TEST AND OPERATIONS CATALOG SHEET	PAGE 1 OF 2
1 TEST TITLE	LOW/LH2 TANKS AND FACILITY LH2 SYSTEM	2. KSC TEST NUMBER
PURSE.	BOOLES IN A PACIFILITY OF STOLEY	AS-206 AND SUBS

4 PEST DBJECTIVES

VOLUME I - TO PURGE THE S-IVB LOX AND LH2 TANKS, S-IVB ENGINE FUEL DUCT, S-IVB GSE HEAT EXCHANGER AND FACILITY LITE SYSTEM PRIOR TO CRYOGENIC LOADING OF STAGES.

VOLUME II - TO PURGE THE VEHICLE AND GROUND SYSTEMS OF LH2 FOLLOWING VEHICLE CRYCGENIC CRAIN A'D INERT THE GROUND SYSTEMS FOLLOWING LAUNCH.

S TEST DESCRIPTION EQUIPMENT STATUS CONFIGURATION

DOES NOT CONTAIN HAZARDOUS OPERATIONS. THIS TEST & DOES

VOLUME I HAZARDS INCLUDE HIGH PRESSURE AND INERT ATMOSPHERE.

VOLUME II HAZARDS INCLUDE HIGH PRESSURE, GH2 ATMOSPHERE, AND INERT ATMOSPHERE.

VOLUE I

AFTER TEST PREPARATIONS, A HELIUM PURGE OF THE S-IVB LOX TANK AND SYSTEMS WILL BE PERFORMED. THE STAGE LOX TANK SHALL BE CONSIDERED PURGED WHEN A MOISTURE CONTENT LESS THAN 200 PPM IN THE S-IVB STAGE IS ACHIEVED WITH A CONTAMINATION LESS THAN 18 BY VOLUME. SUBSEQUENT TO THE STAGE LOX TANK PURGE, A SYSTEMATIC HELIUM PURGING OF THE S-IVE STAGE LINZ TAX AND SYSTEMS WILL BE ACCOMPLISHED. AFTER A VERIFICATION OF 93% HELIUM, AND LESS THAN 200 PRM MOISTURE CONTENT IN THE S-IVE STAGE LH2 TANK, THE FACILITY LIZ SYSTEM, S-IVE STAGE HEAT EXCHANGER AND THE STAGE/FACILITIES ACCESSORIES SHALL BE PURGED WITH GIE AD VERIFIED TO CONTAIN OR OXYGEN AND THE LHZ TRANSFER LINES VERIFIED TO CONTAIN 99.9% GHE AND A DEW POINT OF -65° OR LESS.

FOLLOWING THE PURGE, ALL SYSTEMS SHALL BE PLACED IN A STANDBY CONFIGURATION WITH HELIUM IN ALL SYSTEMS. AFTER A MINIMUM OF 8 HOURS FOLLOWING COMPLETION OF LH2 FACILITY PURGES, REPEATED DEW POINT READINGS SHALL BE TAKEN TO INSURE THE SYSTEMS ARE WITHIN SPECIFICATIONS.

TEST REQUIREMENTS:

SHOW

- RISI4 ASTP UPLATE	**************************************	Francis 1/5/74 1:50 Sign
B 2/15/73 REVISE RD NU	MEER.	Jo Owens 2/5/3 Thorse 2/20
	SE HEAT EXCHANGER & S-IVB SKID	Contractor Approval KSE Approval
S/U. D. ONDIS	PEASON B CRGANIZATION 5-8771	DULY 6, 1972
S/FRACK BRYAN	11 ORGANIZATION LV-ENG	JULY 20, 1972

F438 2 0F 2
V-20131
5-206 AND SUBS
17 HOURS
-

YOLUME I

VOLUME II

5ID-20131-B

SID-20131-8

PROPELLANT NETWORKS

PAD OIS

S-IVB GSE GROUND POWER FACILITY LH2 SUPPLY SYSTEM SUPPORT H.P. GHE & GN2 S-IVE GROUND & STAGE PREUMATICS

S-IVB STAGE POWER DDAS

RCA 110A COMPUTERS DDAS

RCA 110A COMPUTERS KSC PAD SAFETY

KSC PAD SAFETY

17. OTHER APPLICABLE REFERENCE DOCUMENTATION

VOL. I - N/A

VOLUME II - N/A

18. ITEM CONTINUATION ITEM 5. (CONTINUED)

AFTER VEHICLE LH2 & LOX ARE DRAINED, THE VEHICLE LH2 & GROUND LH2 SYSTEMS WILL BE PURGED WITH GHE. SAMPLES WILL BE TAKEN AS PURGE IS CONTINUED. PAD SAFETY WALK THRU WILL ASSURE THAT LESS THAN 4% GH2 AT THE S-IVB SKID LEVEL IS ACHIEVED BEFORE PAD OPENING. WHEN LESS THAN 4% GH2 IS ACHIEVED, ALL SYSTEMS MAY SE SECURED.

TEST REQUIREMENTS:

NOTE

KSC FORM 23-336C :7/67.

APOLLO/SATURN TEST AND OPERATIONS CATALOG SHEET

TEST TITLE

CAT M. 18 LARKET VEHICLE AUTOMATIC AND MANUAL LOX/LH2

LCGUING AND ERAIN OPERATIONS

AS-207 & SUBS

TEST COLECTIVES

TO FILL THE S-IB STACE WITH LIQUID OXYGEN AND THE S-IVB STACE WITH LIQUID OXYGEN AND LIQUID HYDROGO: TO THE PROVINCE FLIGHT MASS FOR THE SATURN IB LAUNCH VEHICLE.

TO DRAIN THE LAURCH VEHICLE LOX AND LHZ TANKS WHEN SUPPORTING COOT OR A LAUNCH ABORT AND SCRUB.

S TEST CESCA.PTION EQUIPMENT STATUS CONFIGURATION

THIS TEST TO DOES DOES NOT CONTAIN HAZARDOUS OPERATIONS.

HATARDS INCLUDE:

- A. CRYCGENIC PROPELLATITS
- B. PROPELLANT SYSTEMS PRESSURES
- C. IMERT ATMOSPHERES

LY TAYING

THIS TEST WILL BE PERFORMED AS A SUBTASK TO LV COUNTDOWN AND CODT AFTER ALL PROPELLANT LOADING PREPEQUISITES HAVE BEEN COMPLETED. ALL VEHICLE AND ACTIVE GSE SYSTEMS INVOLVED IN PROPELLANT LOADING MUST BE IN LAUNCH DAY CONFIGURATION AND READINESS.

THIS PROCEDURE PROVIDES THE STEPS REQUIRED FOR TOTH AUTOMATIC LOADING VIA THE PROTECLIANT LOADING COMPUTER SYSTEM, OR VIA MANUAL OPERATIONS IN THE EVENT OF A SYSTEM FAILURE.

PROPELLATE LCADING WILL BE INITIATED WITH LOX STORAGE TANK PRESSURIZATION AND LOX TRAISFER SYSTEM CHILLDOWN. THE S-IB IS LOADED FIRST BY SLOW FILL, FAST FILL, THEN SLOW FILL RATES TO 99% MASS. THE S-IVB IS THEN LOADED BY SLOW FILL, FAST FILL, THEN SLOW FILL RATES TO 99% MASS. MORMAL REPLENISH BRINGS THE STAGES UP TO, AND MAINTAINS, 190% MASS LEVELS.

THE LH2 STORAGE TAIK IS THEN PRESSURIZED AND THE LH2 TRANSFER SYSTEM CHILLED DOWN. AT S-IVE LOX 25%, THE S-IVE-IS LOADED BY SLOW FILL, FAST FILL, THEN SLOW FILL RATES TO 100% PASS, THEN REPLENISH IS EVABLED TO MAINTAIN THAT LEVEL.

CCX 200 1-2 PERSENTED TERMINATES AT THE START OF THE TERMINAL COUNT SEQUENCE. Downs HAJB 10/30/3 CHANCE MSFC TEST REDTS 6/15/73 EARLY START S-IVE LH2 CHILLDOWN 3/26/3 15 The Owners 3/27/3 PEVISE TEST REQUIREMENTS 12/15 | ALD RD & TEST REQUIREMENTS Controctor Approval | KSC Approval 6 0FV DATE REASON CONTRACTOR APPROVAL & GASANIZATION Dowens 5-8771 TO MASALESC APPROVAL V.Se II CAGAMIZATION 12. APPROVAL DATE MFC. 3-9-72 LU-ENI-

APOLLO NATURN TEST AND CRENTIONS CATALOGISHEET 2. 2 2 2 2 1 TEST TOTAL

SATURN IB LAUNCH VEHICLE AUTUMATIC AND MARIAL LOX/LH2 V-20152
LOADING AND DRAIN OPERATIONS AS-207 & SUSS

LOCATION LC-39 PAD B 8 1 HOURS

GROUND POWER
S-IB STAGE POWER
S-IVB STAGE POWER
BACKUP BATTERIES
SEARCH LIGHTS
KSC PAD SAFETY
SECURITY POLICE
FIRE FIGHTING
FIGH MEASUREMENTS
IU STAGE POWER

PROPELLATE UTILIZATION SYSTEM LSE/GSE TH LCC MEASURING (LVO) GSE MEASURING (LVO) LCC DATA DISPLAY DOAS RCA 110A COMPUTERS RD 26032

IT OTHER APPLICABLE PERCHENCE COCUMENTATION

IN ITEM -ONTING TICK TIEM 5. (CONTINUED)

LV DRAIN

AFTER PREPARATIONS ARE COMPLETED, DRAIN IS INITIATED BY S-IVB LH2 TANK PRESSURIZATION, LH2 STORAGE TANK VENTING, ALD OPENING THE S-IVB LH2 FILL ALD DRAIN VALVE. WHEN LH2 DRAIN IS COMPLETE, THE STAGE VALVE IS CLOSED AND A SHORT PURGE EMPTIES THE LINES BACK TO THE STORAGE TANK. WHEN LH2 DRAIN IS COMPLETE, LOX DRAIN IS INITIATED BY LOX STORAGE TANK VENTING ALD S-IB ALD S-IVB LOX TANKS PRESSURIZATION. THE S-IVB IS DRAINED FIRST, THEN THE S-IB. PROPELLANT DRAIN IS COMPLETE AND TANK PURGING INITIATED AT APPROXIMATELY T+2 HOURS 50 MINUTES.

TEST REQUIREMENTS:

(LV) TM-011-001-2H 11.0.1, 12.0.1 (S-IB) 60C06050 3.3.0.1 (S-IVB) 1B86721 0.2.5.4.6.0 ALL 0.2.5.4.7.1 0.2.5.4.7.2

M. F. C. B. C. C. J. B. S. C. C. B. C. C.

KSC OPERATIONS PAGE 1 OF 2 APOLLO SATURN TEST AND OPERATIONS CATALOG SHEET TEST TITLE RECTEST SAMBER V-20133 B. EFFECTIVITY SATURN IS LASTON VEHICLE EVERGENCY PROCEDURE AS-206 AND SUBS

TO PROVIDE THE REQUIRED CORRECTIVE ACTIONS TO BE TAKEN FOR SPECIFIC EMERGENCY SITUATIONS TO PREVENT SERIOUS INJURY TO PERSONNEL OR SIGNIFICANT DAMAGE TO

S TEST SESTRIPTION ECUIPMENT STATUS TONFIGURATION

THIS TEST TODES COES NOT CONTAIN HAZARDOUS OPERATIONS.

THIS TOP CONTAINS PROCEDURES FOR SPECIFIC EMERGENCY SITUATIONS. PROCEDURAL. CONTENT IS SYCUAL ON THE TEST OUTLINE AND IN THE TABLE OF CONTENTS. USE OF THIS TOP IS DESCRIBED IN THE INTRODUCTION SECTION.

THE EMERGENCY PROCEDURES IN THIS TOP INTEGRATE LAUNCH MEHICLE TEST CREW ACTIVITY EY CALLING OUT SUBTASKS (BY TCP REFERENCE) TO BE ACCOMPLISHED IN TOTAL OR IN PART. ALD BY CALLING OUT SPECIFIC CONSOLE-LEVEL ACTIONS WHERE APPROPRIATE. REQUIRED ACTIONS ARE PROCEDURALIZED CHLY TO THE LEVEL REQUIRED TO INTEGRATE OVERALL ACTIVITIES.) IN GENERAL, THE EMERGENCY STEPS COMER CALLY ACTIONS REQUIRED TO BRING THE SITUATION TO A SAFE STATIC COMDITION. REAL TIME ASSESSMENTS AND DECISIONS WILL THEN BE MADE TO RETURN TO LORMAL OPERATIONS.

TEST REQUIREMENTS:

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A 9/5/4 ACTP UPDAT	E	yours ilsin	J. Bypu
DEV. 1 DATE :	REASON	Contractor Approval	KSC Approval
27/4/	- SPOAN ZATION	9 CATE	
30 Tamer	5-8571	august 25,	1971
is before it appears	" GREANIZATION	17. APPROVAL DATE	
From Brown	GU-ENG	9/13/7/	

SATURN IB LAUNCH VEHICLE EMERGENCY PROCEDURE SATURN IB LAUNCH VEHICLE EMERGENCY PROCEDURE 19. LOCATION 14 COMPUTER PROC. NACHTHICKTION RS-205 AND SUBSTITUTE OF STATE AND SUBSTITUTE OF SUBTRANCE OF THIS TCP NOT APPLICABLE IS SUPPORT REQUIREMENTS. SUPPORT REQUIREMENTS ARE IDENTIFIED AND SCHEDULED FOR THIS TCP. EMERGENCY SUPPORT REQUIREMENTS. ARE IDENTIFIED AND SCHEDULED PER THE REFERENCED TCP'S SEQUENCED BY THIS TCP. 7. OTHER APPLICABLE REFERENCE DOCUMENTATION TCP'S AS REFERENCED WITHIN THIS TCP. 8. ITEM CONTINUATION	APOLLO'S	ATURN TEST AND OPERATIONS CATALOG (SHEET 2)	PAGE	
AS-205 AND SUBS ACCORD 14 COMPUTER PAGE, AGENT/FICATION LC-39 PER SUBTASK TOP'S SEQUENCED BY THIS TOP NOT APPLICABLE SUPPORT REQUIREMENTS NOTE SPECIFICALLY SCHEDULED FOR THIS TOP, ENERGENCY SUPPORT REQUIREMENTS ARE IDENTIFIED AND SCHEDULED PER THE REFERENCED TOP'S SEQUENCED BY THIS TOP, TOTHER APPLICABLE REFERENCE DOCUMENTATION TOP'S AS REFERENCED WITHIN THIS TOP. B. ITEM CONTINUATION	SATURN IB LAUNCH VEHICLE EMERGENCY PROCEDURE		V-20133	
LC-39 PER SUBTASK TOP'S SEQUENCED BY THIS TOP NOT APPLICABLE SUPPORT REQUIREMENTS NOTE SPECIFICALLY SCHEDULED FOR THIS TOP. ENERGENCY SUPPORT REQUIREMENTS ARE IDENTIFIED AND SCHEDULED PER THE REFERENCED TOP'S SEQUENCED BY THIS TOP. TOP'S AS REFERENCED WITHIN THIS TOP. ITEM CONTINUATION				
NOTE SPECIFICALLY SCHEDULED FOR THIS TOP. EMERGENCY SUPPORT REQUIREMENTS ARE IDENTIFIED AND SCHEDULED PER THE REFERENCED TOP'S SEQUENCED BY THIS TOP. TOP'S AS REFERENCE DOCUMENTATION TOP'S AS REFERENCED WITHIN THIS TOP.	LC-39	PER SUBTASK TOP'S SEQUENCED BY THIS TOP		
TCP'S AS REFERENCED WITHIN THIS TCP.				
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TCP'S AS REFERENCED WITHIN THIS TCP.	The second second	audi Kirin del adia di marana del a distribili di sindi	The last tree	
경영 하이를 하다는 것이 되는 이 사람들이 보고 있다. 그리는 사람들이 되었다. 그리는 사람들이 다른 사람들이 다른 사람들이 다른 사람들이 되었다.		ENCED WITHIN THIS TCP.		
경영 경영을 가장 그는 이렇게 되었다고 있다. 그는 모양 등에 등이 없는 사람들이 되었다고 있다.				
하는 경험을 가는 물이 되는 일하는 것이 없는 사람들이 들어 들어 없었다.				
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F.7.

34

KSC OPERATIONS PAGE 1 OF 3 APOLLO SATURN TEST AND OPERATIONS CATALOG SHEET TEST - TOP V-21223 I'U POWER APPLICATION/REMOVAL EFFECTIVITYSL206 & SUBS AS-512 & SUBS 41-7457 SSJE . 7 . ES

THE PURPOSE OF THIS PROCEDURE IS TO PROVIDE THE INSTRUCTIONS FOR PROPERLY APPLYING NO PERSONAGE POWER TO THE 1U STAGE AND ASSOCIATED ESE, EITHER MANUALLY OR AUTOMATICALLY 1.57 LITID 5 FOR REMOVING POWER IN CERTAIN EMERGENCY SITUATIONS ARE INCLUDED.

A ITEST DESCRIPT IN EQUIPMENT STATUS CONFIDURATION

THIS TEST . . . COES X DOES NOT CONTAIN HAZARDOUS OPERATIONS.

PRIOR TO THE APPLICATION OF POWER, RESISTANCE READINGS WILL BE MADE BETWEEN EACH BUS ALD RETURN BUS PER APPLICABLE IN BUS READING SHEET TO ENSURE SYSTEM INTEGRITY. THE PEADLING WILL BE OBTAINED USING SIMPSON 260 OR EQUIVALENT.

ALC 13 CABLING WILL BE PER APPLICABLE SCHEMATICS EXCEPT AS OTHERWISE REQUIRED BY LITHER APPROVED PROCEDURES. THE PROCEDURE WILL BE DIVIDED INTO SECTIONS AND SUB-CECTIONS AS TRECESSARY TO DISTINGUISH BETWEEN DIFFERENT MODES OF OPERATION.

PART I:

PREPARATIONS: THIS SECTION DEFINES IN DETAIL THE SUPPORT REQUIREMENTS IMPOSED BY THIS PROCEDURE AS WELL AS THE PRELIMINARY PREPARATIONS RE-QUIRED PRICE TO ENERGIZING ANY POWER SUPPLY.

P:47 11:

THIS SECTION PROVIDES A DETAILED PROCEDURE FOR APPLYING POWER TO THE IU STAGE AND SPECIFIES AT WHAT TIMES THE IU COOLANT AND TELEMETRY WILL SE TURNED ON. THE STAGE VOLTAGE VALUES AND TOLERANCES SPECIFIED ARE PER APPLICABLE IU SPECIFICATIONS AND CHECKOUT PROCEDURE.

PART HII:

POWER OFF: DETAILS THE SEQUENCE OF EVENTS FOR THE COMPLETE SHUTDOWN OF IU POWER.

APPENDIX 1: EMERGENCY POWER DOWN: THIS SECTION IS DESIGNED FOR THE REMOVAL OF POWER AS QUICKLY AND AS SAFELY AS POSSIBLE. VERIFICATION OF LVDC/ LVDA "HALT" AND "MEMORY RELEASE" PRIOR TO POWER REMOVAL IS LEFT TO THE DISCRETION OF THE 18M TEST CONDUCTOR.

PHISE: 11 & IV

TEST REQUIREMENTS MSFC TM-011-01-2H 13.2.1.1.2

	SEE	COLTHUATI	O'N SHEET FOR	REVISION HISTO	2Y	13 (18 p. 1945)	
2 : F.E .	AT DATE AND A	2	REASON			Contractor Approval	KSC Approval
1		e de la companya de l	IFM KIS		-1	DATE -7/73/71	
. /	/ /ma		LV-CIOC			9-10 11	

APOLLO/S	ATURN TEST AND OPERATIONS CATALOG (SHEET 2)	PAGE
TU POWER APPL	ICATION/REMOVAL	2 KSC TEST NUMBER V-21223 3 EFFECTIVITY SL-206 & SUI AS-512 & SUES
VAB/LC-39 A,B	KA01(512 & SUBS); L401 (206 & SUBS)	15 EST. TEST TIME

INTERSTAGE:

CABLES MATED ON LAUNCH VEHICLE

2. OFF-COMPLEX: NONE

ON-COMPLEX:

IBM QUALITY ASSURANCE

IBM MECHANICAL

IBM VEHICLE NETWORKS

.IBM GROUND NETWORKS (AUXILIARY POWER)

IBM GROUND COMPUTER 1BM DDAS

IBM MEASURING

E & I RECORDERS (TBC)

17 OTHER APPLICABLE REFERENCE DOCUMENTATION

512 & SUBS

200 & SUBS

AESS IU ESE 40/14490 AESS IU POVER ESE: 40M13604

401157793 40M67707

V-34017

18 ITEM CONTINUATION

BLOCK 5 CONTINUED:

IU STAGE POWER REMOVAL WITHOUT COMPUTER SUPPORT: THIS IS A NORMAL POWER DOWN EXCEPT THAT SUPPORT IS REQUIRED FROM THE ML/DCE PANEL TO

TURN OFF CERTAIN MOO'S SPECIFIED IN THE PROCEDURE.

APPENDIX 3: IU BUS READING SHEET: SELECTED RESISTANCE READINGS ARE MADE IN THE FOLLOWING ESE DISTRIBUTORS: X02-620A1, X02-622A1, X02-625A1 (S-150/ 207 ONLY), AND X01-664A2. INITIALS OF PERSONS MAKING READINGS AND

DATE WILL BE RECORDED.

DATA EVALUATION LIST: THIS SECTION IS PROVIDED TO RECORD MEASURE-MENTS THAT WILL BE REVIEWED AT LEAST ONCE EACH WEEK, WHEN IU POWER IS APPLIED. THE DATA SOURCE, IDENTIFICATION NUMBER, DESCRIPTION, REMARKS, CAP/TPR NUMBER, AND INITIALS AND DATE WILL BE RECORDED AND REVIEWED FOR TREND EVALUATION.

CONFIGURATION: VEHICLE MUST BE STACKED.

	POWER APPLICA	TION/REMOVAL		V-212	ST NUMBER 23 FIVITYSL-206 & SUE 2 & SUBS
EM C	CNTINUATION			1 73-31	2 0 3003
εv]		REASON	CONT.APP	<u>л. </u>	KSC APPVL
	03-04-68	MODIFY BLOCK 5	S/G.E. LE	CKIE	S/L.R. DAVIS
3	05-17-68	MODIFY BLOCK 5	S/G.E. LE	CKIE	S/L.R. DAVIS
C	05-27-63	MODIFY BLOCK 5	S/G.E. LE	CKIE	S/L.R. DAVIS
	07-15-70	MODIFY BLOCK 5	S/D.E. SC	HMIDT	S/L.R. DAVIS
Ξ	02-05-71	MODIFY BLOCKS 5 AND 15	S/G.E. LE		S/L.R. DAVIS
F	J2-15-71	CC:PLETE REWRITE	15/ Tu	Lee 3/23/11	PR Deny
G	03/01/72	MODIFY BLOCKS 3,4,5,13,14,16 AND 17	1. Ele	Karth	
	54/20/73 .	REVISE BLOCK 18	Jak Jich	lectopho	K.Dar
			1,60	Arthur 1998	+× 100 0
was product to a	CE-18-74	REVISE MSFC REQUIREMENTS	1.6 Ja	uor 7- _{16.}	J.R. Downs
	66-18-74	REVISE MSFC REQUIREMENTS	J. C. Jan		

•

KSC FORM 23-338A (7-67)

KSC OPERATIONS
APOLLO SATURN TEST AND OPERATIONS CATALOG SHEET PAGE 1 OF 2 KSC TEST NUMBER SWITCH SELECTOR VEHICLE TEST V-21255 51-506" & SUBS AS-512 & SUBS 4 TEST CBJESTIVES

THE OBJECTIVE OF THIS TEST IS TO VERIFY THE PROPER OPERATION OF THE SWITCH SELECTOR.

TEST DESCRIPT ON EQUIPMENT STATUS CONFIGURATION

THIS TEST - DCES Z DOES NOT CONTAIN HAZARDOUS OPERATIONS.

THIS PROCEDURE VERIFIES PROPER OPERATION OF THE SWITCH SELECTOR WHEN CONNECTED IN FLIGHT CONFIGURATION BY ISSUING ADDRESSES AND COMPLEMENT ADDRESSES. END ITEMS OF ACTIVE SWITCH SELECTOR CHANNELS ARE VERIFIED BY MONITORING VEHICLE A'D GROU! D DISCRETES.

THE IU WILL BE CONNECTED PER: CID 79091XX AS-511 AND SUBS CID 79105XX SL-206 AND SUBS

THE FOLLOWING SYSTEMS WILL BE POWERED OFF:

- 1. FLIGHT COMPUTER
- 2. STABILIZER
- 3. RF

PHASE: III, IV, V, VI

TEST REQUIREMENTS: MSFC: TN:411-001-2H 13.1A 1.1.5 13.2.1.1.9

E 3'8/72 REVISED BLOCKS 3, 5, AND 13 2 11/23/71 REVISED BLOCK 5 & 16 3 3/02/71 CHAIGE PREFIX FROM "IV" TO "V"; REVISE BLK 15 S/G.E.LECK	
11/23/71 REVISED BLOCK 5 & 16	1-10 y Mil Rossi
11/23/71 REVISED BLOCK 5 & 16	
3/02/71 CHA GE PREFIX FROM "IV" TO "V"; REVISE BLK 15 S/G.E.LEC	is I falle of the Dawy
	KIE S/L.R.DAVIS
3 17/13/70 REVISE BLOCK 1 & 5 S/D.E.SCH	MIDT S/L.R.DAVIS
= 6/10/70' RE/ISED BLOCKS 1,3,5,13,16, & 17 S/D. SCHM	IDT 5/L.R.DAVIS
S REV. DATE REASON Contractor Ap	proval KSC Approval
S.C. C. PEURRUNG IBM - K73 SEPTEMBER	20, 1967
S/J. K. DAVIDSON LV-GDC-25 OCTOBER 21	

APOLLO/S	ATURN TEST AND OPERATIONS CATALOG (SHEET 2)	PAGE 2 OF 2
SWITCH SELECTOR VEHICLE TEST		. V-21255
		* 55-1000'S SUES AS-512 & 5UBS
13. LOCATION VAB/LCC 39A,B,	14. COMPUTER PROC. INDENTIFICATION N/A	11 MEN 15 MINUTES EA
A SUPPORT OF SUIDEN	ENTS	

INTERSTAGE:

PRIOR TO ESE/GSE TEST (V-20025), NONE. AFTER PERFORMANCE OF

ESE/GSE TEST: S/C, S-IC

OFF-COMPLEX:

NONE

IBM QUALITY ASSURANCE ON-COMPLEX:

IBM VEHICLE NETWORKS

IBM MECHANICAL

IBM EDS

IBM MEASURING

IBM FLIGHT CONTROL

17 OTHER APPLICABLE REFERENCE DOCUMENTATION

IU ELECTRICAL SCHEMATIC 79101 XX-AS-5XX AND SUBS

SL-206 AND SUBS

18 ITEM CONTINUATION

57 FD=14 2 \ 104 7 67

APOLLO/SATURN TEST AND OPERATIONS CATALOG SHEET	PAGEOF
ELECTRICAL BOUDING OF COMPONENTS	. V-21478 3. EFFECTIVITYAS-206 & SUB
	AS-511 & SUB
TEST CB.ECT.VES	
TO MEASURE AND RECORD DO RESISTANCE READINGS BETWEEN MOUNTE A SINGLE UMBILICAL GROUND TO ENSURE PROPER ELECTRICAL BONDI STAGES SINGULAS/ID AND SC/FAS/ID WILL ALSO BE MEASURED.	
TEST DESCRIPTION EQUIPMENT STATUS CONFIGURATION	(REPLACES IV-21250)
THIS TEST DOES X DOES NOT CONTAIN HAZARDOUS OPERATIONS.	
7-ASE: 12, 11, 111, 1V, V, VI	
F 11.7- REVICE MSFC PEQUIPEMENTS	LE forting to ARD
. 1-2-11 PEVISE MARC REQUIREMENTS	Hickory Kalun
T : 14 13 REVISED BLOCKS 4,5 & 17	Chalillat L.R. War
4 3/51,72 REVISE BLOCKS 5 AND 16	Land Admit Kille
FE. CATE REASON	Contractor Approval KSC Approval
STEE TORINGAL RECEIVED 9	DATE
113M - K/5	4/23/11
	APPROVAL DATE

LV-600 -24

PAGE 2 OF 2 APOLLO/SATURN TEST AND OPERATIONS CATALOG (SHEET 2) 2. KSC TEST NUMBER 1. TEST TITLE V-21478 ELECTRICAL BONDING OF COMPONENTS S. EFFECTIVIT AS-206 & SUBS AS-511 € SUBS 14. COMPUTER PROC. INDENTIFICATION 2 MEN -- 5 HOURS EA VAB, LC39A,B,C N/A 16. SUPPORT REQUIREMENTS INTERSTAGE: N/A OFF-COMPLEX: N/A ON-COMPLEX: FACILITY OIS IBM QUALITY IBM VEHICLE NETWORKS 17. OTHER APPLICABLE REFERENCE DOCUMENTATION 7921601 7916404A 18 ITEM CONTINUATION

T, ASTIVATE, LOAD TEST, AND ELECTRICALLY CHECK IU BATTERIES. TO MONITOR VOLTAGE, ELPPENT AND TEMPERATURE OF IN BATTERIES IN THE LAB AND AFTER INSTALLATION IN THE LAHIGLE. TO DISCHARGE IN FLIGHT BATTERIES USED FOR TESTING, ACTIVATED AS SPARE, A ATTIVATED FOR FLIGHT BUT NOT USED.

TEST DESCRIPTION EQUIPMENT STATUS CONFIGURATION

(REPLACES IV-21254)

THIS TEST IT DOES DOES NOT CONTAIN HAZARDOUS OPERATIONS.

THE FLIGHT BATTERY IS ACTIVATED BY THE ADDITION OF ELECTROLYTE. FOR BUSSES 6D10, 6D30, EL-1 AND SPARE ACTIVATE 19 CELLS; 6D20, 18 CELLS. THE CELL VOLTAGES ARE CHECKED. THE CHURCH PARAPITY IS CHECKED. A PRESSURE TEST IS PERFORMED. THE BATTERY IS LOAD TESTED. THE BYPECTED CURRENT. THE PROPER BLIND PLUG IS SELECTED TO PROVIDE THE PROPER VOLT-WE AT EXPECTED LOAD CURRENT.

THE VOLTAGE, CURPENT AND TEMPERATURE (IF TEMPERATURE MEASUREMENTS ARE AVAILABLE) WILL BE MONITORED AND RECORDED EVERY THIRTY (30) MINUTES AFTER BATTERIES ARE INSTALLED.

FINALE IT LOAD BANK TO BATTERY. SET LOAD BANK TO DESIRED LOAD AND DISCHARGE BATTERY. TITAGE, CURRENT, TEMPERATURE AND TIME WILL BE RECORDED. AFTER THE BATTERY IS DIS-GARRIED, INSERT JUMPER TO POSITIVE AND NEGATIVE TERMINALS. FORTY-EIGHT (48) HOURS - "JEE-SASSING" IS MANDATORY PRIOR TO PLACING BATTERY IN SEALED CONTAINER FOR SHIPMENT

ACTIVATION WILL BE PERFORMED DURING THE MINUS COUNT AS CALLED OUT IN THE INTEGRATED THE PRICEDURES AND LAUNCH COUNTDOWN PROCEDURE.

=-45E: 17, 7!

TEST REQUIREMENTS

MSFC: [M-011-001-2H 14.0.4.3

AS-206 & SUBS MSFC: 7921601 0.3.4.1.0.1 0.3.4.1.1.1 0.3.4.1.1.1.1 0.3.4.1.1.1.2

		1	1.6 7.
D 8, 18 F. REVISE MSF	C PEQUIREMENTS	1 Le chiner 1	Tix K. Lilean
1 - 103 TE PEVISE BLO	CKS 5, 17, 18	12 Leenie	1 P. Dies
5 - 111772, REVISE MSF	C REQUIFEMENTS	S/G.LECKIE	S/L.DAVIS
- 311171 PHAISE BEO	CK 5	S/G.LECKIE	S/L.DAVIS
PER DATE	REASON	Contractor Approval	KSC Approvol
. N * 3 4 . * 4 E P E C . A .	6 ORSANIZATION	9 DATE	
F.E. LECHIE	IBM - K73	4/23/71	
NALA - 57 APPEC. AL	IT: OFGANIZATION	12 APPROVAL DATE	
E. L. DAVIS	LV-GOC-25	4/26/71	
TE C.	many trapperature was a fire		

APOLLO	SATURN TEST AND OPERATIONS CATALOG (SHEET 2)	PAGE 2 OF 2	
TEST TITLE		V-21479	
IU BATTERY ACTIVATION, MONITORING AND DISCHARGE		AS-510 & S	
VAB, 25E18	14. COMPUTER PROC. INDENTIFICATION N/A	7 MEN - 9 HOURS	

INTERSTAGE:

OFF-COMPLEX: IBM QA

VEHICLE NETWORKS

NASA REPRESENTATIVE

BOEING BATTERY CONSOLE REPRESENTATIVE

ON-COMPLEX:

17. OTHER APPLICABLE REFERENCE DOCUMENTATION

1. R-ASTR-E: OPERATIONAL MANUAL FOR FLIGHT BATTERY TEST CONSOLE, ASTRIONICS LABS

2. ACTIVATION, TEST, AND HANDLING PROCEDURE FOR MAP 4240 BATTERIES, ASTRICNICS LABS

3. IBM DRAWING 7915893-001, BATTERY ASSEMBLY (UNACTIVATED), AS-206 & SUBS

18. ITEM CONTINUATION

BLOCK 17 (CONTINUED)

4. IBM DRAWING 7915893-009, BATTERY ASSEMBLY (UNACTIVATED), SL-513, 515

5. IBM DRAWING 40Z20780-001, BATTERY ASSEMBLY (ACTIVATED), AS-206 & SUBS

6. IBM DRAWING 40Z20780-009, BATTERY ASSEMBLY (ACTIVATED), SL-513, 515

7. IBM PROCEDURE 7915666, BATTERY SHIPPING AND HANDLING

KSC OPERATIONS APOLLO/SATURN TEST AND OPERATIONS CATALOG SHEET	PAGE 1 0F 2
TEST TITLE	V-21496
Test Procedure - Reworked Wire Harness	511 & Subs: 206 & Subs

To verify the integrity of stage harnesses affected by modification or repair after stage arrival at KSC.

5 TEST DESCRIPTION EQUIPMENT STATUS/CONFIGURATION

THIS TEST __ DOES __ DOES NOT CONTAIN HAZARDOUS OPERATIONS.

This TCP provides the method for isolation resistance and continuity testing of stage harnesses after rework. The TCP will be activated upon stage arrival at KSC and will remain open until just prior to launch. A continuous data log will document each harness as it is tested and the reason for test.

The TCP provides for megger testing of a wire harness only by PCR to the TCP, upon approval of the specific test requirement by MDAC Electronics Engineering and LVO-GDC.

MSFC T.R. Not Applicable

S. PEV. ! DATE	REASON		Contractor Approval	KSC Approval
F. & Marlet	8. ORGANIZATION MDAC	9.	9-8-71	1 /4
Carl Inne	LV-CDC-2-3	12.	S/17/71	

Test Procedure - Reworked Wire Harness 511 & Subs; 206 & Su	APOLLO/SATUR	N TEST AND OPERATIONS CATALOG (SHEET 2)	PAGE 2 OF 2
Test Procedure - Reworked Wire Harness 511 & Subs; 206	EST TITLE -		
Test Procedure - Revorked Wire Harness LOCATION IL 39 14. COMPUTER PROC. INDENTIFICATION ID 39 SUPPORT REQUIREMENTS OTHER APPLICABLE REFERENCE DOCUMENTATION ITEM CONTINUATION			The state of the s
IC 39 N/A SUPPORT REQUIREMENTS OTHER APPLICABLE REFERENCE DOCUMENTATION ITEM CONTINUATION			
OTHER APPLICABLE REFERENCE DOCUMENTATION ITEM CONTINUATION			15. EST, TEST TIME
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KSC UNERATIONS APOLLO SATURN TEST AND DIFERATIONS, CATALOG SHEET	PAGEOF
The second secon	V-21497
IL RETICLE METHORYS PRE-POWER CHECKS	AS-512 & SUBS

THE PURPOSE OF THIS TEST IS TO PROVIDE A SYSTEMATIC METHOD FOR RESTORING THE IU ESE SISTEM TO PRE-POWER STATUS AFTER A VEHICLE LAUNCH.

CONTAIN HATARDOUS OPERATIONS. te sinest ividad

THIS TEST CONTAINS SEVEN (7) PARTS

FLOT 1 - DOOMENTATION, EQUIPMENT AND POWER REQUIREMENTS

Incurentation, equipment and Power Requirements are defined.

FIRT 2 - POST LAUNCH OPERATIONS

listributor Integrity Seals are verified. Patentpares are removed and Pins are inspected. istributor Paddle Pins are inspected and cleaned. Fela. and Diode Modules are removed and tested. resit breakers are tested at discretion of Engineering and Reliability. The Delay Telays are checked. rassover distributor Taper Pins are pull tested.

AT Power Distributor is inspected. Power Contactors are checked.

FERT 3 - TEST BOY VALIDATION

1 -C-1.3 AND IU/SC INTEPFACE Fuse Boxes and Adapter Cables are continuity and reaser checked. Fuses are verified. fortable CAT Distributor is continuity checked. Ester. Substitute Assemblies are continuity checked and pressure tested. est Box Draings are verified for discrepancies V.S. hardware changes.

PERF 2 - CONTINUITY AND MEGGER CHECK OF CABLES

: 14T and ESE Cables are continuity and megger checked.

7 7 20 7-1932-3	TE MSFC REQUIREMENTS	12 Jane 1 mg	P Down
1 3/01/72 PE/I	SE BLOCKS 3, 13 AND 18	thin thin	Tilling
	REASON	Contractor Approval	KSC Approval
	a to the carry of	10 21 / /	
Je Tipe	1BM/K73	11/10/71	
N-2-1 -574-	TO CHOANZATION	1. AFPROVAL DATE	
. 1. 1)	VEB 25	11/10/11	#TEST

APOLLO SATURN TES	T AND OPERATIONS CATALOG SHEET 21	PASE_2_ 3= _2
IU VEHICLE NETWORKS PRE	DONED CHECKS	V-21497
TO VEHICLE NETWORKS FRE	-FOWER CHECKS	AS-512 & SUBS
VAB/LC-39 A. B	TER PROC INDENTA CAT ON N/A	4 MEN - 52 HOURS

16 SUPPORT REQUIREMENTS

INTERSTAGE: NONE OFF COMPLEX:

ON COMPLEX:

IBM OUALITY ASSURANCE

OIS

17. OTHER APPLICABLE REFERENCE DOC: MENTATION

IS ITEM CONTINUATION

PART 5 - PRE-INTERCONNECT CONTINUITY CHECKS

IU ESE Cables are disconnected in preparation for resistance readings.

PART 6 - INTERCONNECT CONTINUITY CHECKS

Resistance Readings are made from the ESE Distributors to the vehicle end of the Umbilical Cables.

PART 7 - POST INTERCONNECT CONTINUITY AND MEGGER CHECK OPERATIONS

Distributors are recabled. Dust Caps are placed on spare distributor jacks. Patchboards are reinstalled. Relay and Diode Modules are reinstalled. 1137W133, 6281W1, 6281W15, 1244-201W1 are continuity checked.

CONFIGURATION: Equipment in place, IU Ground Power OFF.

PHASE: 1A, IB

TEST REQUIREMENTS:

N/A

	KSC OPERATIONS	PAGE 1 OF 2
the state of the s	ST AND OPERATIONS CATALOG SHEET	2. KSC TEST NUMBER
T TITLE		V-21535
LOW BAY POLICE SETUE		3. EFFECTIVITY
20.1 20.1 20.1.1. 0220		206 & SUBS
ST DOLECTIVES	DISTANCE MEASUREMENTS	
2) CULLULY TIE UN	SISTANCE MEASUREMENTS	
2) 0, 1.20.2	AT STAGE POWER	
1 1 20 0233	THE SELECTOR OPERATION	
() BUILD ALL STATE	SWITCH SELECTOR FUNCTIONS	
6) RLHOVL STACE A	ID GROUND POWER	1
T SESCRIPTION EQUIPMENT ST		
IS TEST _ DOES _	DOES NOT CONTAIN HAZARDOUS OPERATIONS.	
THIS TEST COLSISTS	CR THE POLLOWING:	
2:125 1252 (0.51515		
1) PREPARATIONS		
The state of the s		TO AT O DECOMPOSITION
A. VEHICLE EU	S RESISTANCE MEASUREMENTS WITH UMBILI	ICAIS DISCONNECTED.
B. COMMET THE	E ELECTRICAL UMBILICALS.	THEOTOTOTO
C. CIRCUIT ER	EAKER AND PANEL SWITCH POSITIONS ARE	VERIFIED.
D. BUS RESIST	ANCES ARE VERIFIED NORMAL.	
6) 5055 110	The state of the s	
2) POWER-UP		No. of the parties of the second
A. GROUND POW	ER IS APPLIED AND ALL EXPECTED TALKBO	ACKS VERIFIED.
B. STAGE POWE	R IS APPLIED WITH THE EXCEPTION OF SI	EQUENCER POWER, AND ALL
EXPECTED T	ALEBACKS ARE VERIFIED.	
	a mana	
3) SWITCH SELECTO	R TESTS	
דעב ני ברכם נ	TCH SELECTOR OPERATION IS VERIFIED.	
B STATE	SWITCH SELECTOR FUNCTIONS ARE RESET.	
C. SECUENCER	POWER IS APPLIED.	
		The second second
4) POWER OFF		
	THE REPORT OF THE A CHAIRMA	E OPROSTOR OF THE STATE OF
A. STAGE AND	GROUND POWER IS REMOVED IN A SEQUENCE LETION OF LOW BAY C/O THE UMBILICALS	ARE DISCONVECTED.
E. AFTER COMP	TETTON OF LOW BAL C/O THE ORBITICALS	ALL DISCOURS .
	ALTON DESIGN BY THE POST OF	
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14-14-14-14-1	and the second second second	w - pair file a sent file and and
V. DATE	REASON	Contractor Approval KSC Approva
ONTHACTOR APPROVAL		DATE
C & Ilegam	MODONNELL DOUGLAS	1-31-72
	1,0000111101110111011111111111111111111	12. APPROVAL DATE
MASA ASC AP HOVAL	11. ORGANIZATION	THE PARTY OF THE PARTY

MCDONNELL DOUGLAS

11. ORGANIZATION
LV-GDC-23

SE FORM 2 1900 7 07.

12. APPROVAL DATE 2-1-72

APOLLO/S	ATURN TEST AND OPERATIONS CATALOG (SHEET 2)	PAGE 2 OF 2
TEST TITLE	V / *	2. KSC TEST NUMBER
LOW BAY POW	commo	V-21535
LOW BAI PON	EN SEIOF	206 & SUES
LOCATION	14. COMPUTER PROC. INDENTIFICATION	15. EST. TEST TIME
LOW BAY	NONE	1 HOUR
SUPPORT REQUIREM	ENTS and a	
SID -21535-0		I was a second of
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THE SHOP SHOP SHOP		
	· July	s should be a fi
	And the state of t	
		X
O"HER APPLICABLE	REFERENCE DOCUMENTATION	t
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Edward St.	CONTRACTOR OF THE PARTY OF THE	· · · · · · · · · · · · · · · · · · ·
TEM CONTINUATION	AND THE PARTY OF T	
MSC TEST SE	BC AND CRITERIA REQUIREMENTS	·
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N to all to the	3 000 200 000	

PAGE 2 OF 2

V-21535

D. EFFECTIVITY

GSE

10. EST, TEET TIME

24 HOURS

APOLLO SATURN TEST AND OPERATIONS CATALOG SHEET	PAGE 1 OF 2 APOLLO/SATURN TEST AND OPERATIONS CATALOG (SHEET 2)
1. TEST T.TLE	U DIEST TITLE	
BATTERY SUBSTITUTE VERIFICATION (S-IVB/S-IB)	V-21526 BATTERY SUBSTITUTE VERIFICATION (S-IVB/S-IB	.)
4. TEST OBJECTIVES	GSE 18. LOCATION 14. COMPUTER PROC. INDENTIFICATION VAB/25B18 NONE	
TO VERIFY ELECTRICAL CIRCUITRY AND CALIBRATION OF ELECTRICAL		
WITHIN FOUR BATTERY SUBSTITUTE ASSEMBLIES USED ON SIVE STAGE.	BATTERY CHECKOUT CONSOLE 40M22080	
en de la Carlo br>La Carlo de la		
S. TEST DESCRIPTION/EQUIPMENT STATUS/CONFIGURATION	- 1 	
THIS TEST DOES DOES NOT CONTAIN HAZARDOUS OPERATIONS."		
THE TEST CONTAINS THE FOLLOWING ELEMENTS:	요. 요. 사람들이 나를 다 그렇게 그렇게 하면 하셨다. 그는 그 그 살아.	
A. VERIFICATION OF ELECTRICAL CONSOLE OPERATION		
B. RESISTANCE CHECKS	17. OTHER APPLICABLE REFERENCE DOCUMENTATION	
C. T/M VOLTAGE TEST	4 40M71361 BATTERY SUBSTITUTE S-IVB, S-IB, 40M67493 BATTERY SUBSTITUTE S-IVB, S-IB,	FWD 1
D. T/M CALIBRATIGN CHECK	40M67501 BATTERY SUBSTITUTE S-IVB, S-1B,	AFT 2
E. T/M CLRRENT TEST	17.) Continued - 40M71360 BATTERY SUBSTITUTE'S	-IVB, S-1B, AFT 1
F. T/M TEMPERATURE AND HEATER TEST	KSC TEST SPEC AND CRITERI)	A DEGUTORNES
	보고 하는 사람들은 이렇게 하는 사람이 되는 생활이 되는 아이들을 다 하는 사람들이 되었다.	4 REQUIREMENTS
G. PRESSURE TEST	NOT APPLICABLE	
CONFIGURATION: LABORATORY TEST		
	[- 보고 : 1 - 발표] . [1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1	
	No. 11 글로마 (1 1 1 1 1 2) - 12 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
A 8-20-74 REVISES TO INCLUDE THE TWO UNIT, AFT BUS 2 REAL	H 20	
	or Approval KSC Approval	
G. MASA-RSC APPROVAL 11. ORGANIZATION 12. APPROVA	COATE TO SEE THE SECOND	
	-72- 11 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
sc remuzzigha 17107,		

71

	APOLLO SATI	KSC OPERATIONS JRN TEST AND OPERATION	S CATALOG SHEET	. PAGE 1_OF_2_
: TEST	TTLE			2. KSC TEST NUMBER V-21537
	VEHICLE INTER	FACE COMPATIBILITY TEST		3. EFFECTIVITY
:	ta de			206 & SUBS

TEST COLECTIVES

THE COCCECTIVE OF THIS TEST IS TO VERIFY THE COMPATIBILITY OF THE S-IVB INTERFACE WIRING WITH I.D. AND S-IB. INCLUDED IN CHECKOUT ARE LOX AND LH TANK COMPONENTS, EBW POLSE SENSORS AND RANGE SAFETY SAFING PLUGS.

S TEST DESCRIPTION EQUIPMENT STATUS/CONFIGURATION

THIS TEST __ DOES __ DOES NOT CONTAIN HAZARDOUS OPERATIONS.

THIS TEST CONSISTS OF THE FOLLOWING:

- 1. THROUGH STAGE WIRING (FROM FORWARD TO AFT INTERFACE) CONTINUITY IS VERIFIED.
 THE IMPEDANCE OF EACH PIN ON EACH INTERFACE CONNECTOR IS MEASURED WITH
 REFERENCE TO S-IVB GROUND. THE MEASUREMENTS ARE COMPARED TO EXPECTED VALUES.
- 2. INSULATION RESISTANCE AND CAPACITANCE OF THE P.U. PROBE IS VERIFIED.
- 3. RESISTANCE OF THE LOX AND LH2 CHILLDOWN PUMPS THROUGH THE POWER INPUT CABLE IS VERIFIED.
- 4. RESISTANCE OF THE ECS ENVIRONMENTAL CONTROL TEMPERATURE ASSEMBLIES IS VERIFIED.
- 5. RESISTANCE OF THE EBW FIRING UNITS THROUGH THE OUTPUT CABLE IS VERIFIED.
- 5. THE CAPACITANCE OF THE LOX AND LH2 DEPLETION AND LEVEL SENSORS IS VERIFIED.
- 7. RANGE SAFETY SAFING PLUGS ARE REMOVED, CHECKED PER TCP V-21225 AND REINSTALLED.
- 8. EBW PULSE SENSORS ARE REMOVED, CHECKED PER TCP V-21482 AND REINSTALLED.
- 9. CIRCUITS NOT FUNCTIONALLY CHECKED DURING SUBSYSTEM TESTING ARE IMPEDANCE CHECKED.
- 10. BATTERY FIT CHECKS ARE PERFORMED.
- INSURE CORRECT FUNCTIONAL TERMINATION OF LH AND LOX CONTROL AND INSTRUMENTATION LEVEL SENSORS.

INSURE CORRECT # 07-23-74 INSTRUMENTATION	TERMINATION OF CONTROL N LEVEL SENSORS.	JOHn Solver
t. FEV. DATE // Co.	REASON	Confractor Approval KSC Approval
7. CENTRACTOR APPROVAL	8. ORGANIZATION	S. DATE
G S Junione	MCDONNELL DOUGLAS	1-31-72
10. HASA-KST REPROVAL	11. ORGANIZATION	12. APPROVAL DATE
god Jones	LV-GDC-23	2-1-72
KEC FC=1/23-338 (7/87)		

APOLLO/SATURN TEST AND OPERATIONS CATALOG (SHEET 2) KSC TEST NUMBER VEHICLE INTERFACE COMPATIBILITY CFFECTIV TY 205 & SUBS S. LOCATION 14. COMPUTER PROC. INDENTIFICATION LOW BAY 16. SUPPORT REQUIREMENTS NONE V-21225 R/S CONTROLLER V-21482 EBW PULSE SENSOR V-34013 BATTERY FIT CHECK 18. ITEM CONTINUATION CONFIGURATION: THE S-IVB WILL BE LOCATED IN LOW BAY AND UMBILICALS WILL NOT SE MATED. KSC TEST SPEC & CRITERIA REQUIREMENTS (1887621) 0.2.2.4.4.1 0.2.2.4.4.2 0 2 2 4 4 4 0.2.2.4.4.9

APOLLO SATURN	KSC OPERATIONS TEST AND OPERATIONS CATALO	OG SHEET PAGE 1 OF 2	-
1 TEST TOTLE		2. K35 7.531 NUMBER	
SIVE FLICTRICAL SUR	SYSTIMS CHECKOUT (AUTOMATIC)	a. EFFECTIVITY 207 & SUBS	

TEST OBJECTIVES

THE ORDICTIVE OF THIS PROCEDURE'IS TO VERIFY THE STAGE POWER DISTRIBUTION CIRCUITS, STAGE CONTROL SWITCHING CIRCUITS, AND ASSOCIATED ESE CIRCUITS. THE TCP VERIFIES THE NICESSARY PREPARATIONS FOR EXECUTION OF AUTO PROGRAMS, EAPD (POWER DISTRIBUTION), EASR (RAGE SAFETY SUBS), FALE (EBW SUBS), FAPU (P.U. SUBSYSTEM), FAPX (POWER TRANSIER).

TEST DESCRIPTION EQUIPMENT STATUS CONFIGURATION

THIS TEST | DOES | X DOES NOT CONTAIN HAZARDOUS OPERATIONS.

- 1. THE C/D INTERTERS ARE FUNCTIONALLY TESTED WITH LOAD SIMULATORS.
- 2. STATIC CURRENT LOADS OF MAJOR SUB-ASSEMBLIES AND COMPONENTS ARE VERIFIED.
- 3. T/M SYSTEMS ARE ACTIVATED (CLOSED LOOP) AND R.F. SILENCE IS VERIFIED.
- 4. STAGE LOGIC CIRCUITS AND INTERLOCKS ARE HINCTIONALLY CHECKED.
- 5. VEHICLE POWER TRANSFER WITH ASSOCIATED CONTROL CIRCUITS IS VERIFIED.
- 6. SWITCH SELECTOR COMPLIMENT CODES ARE ISSUED AND THE PROPER RESPONSES VERIFIED.
- 7. DEPLETION SENSOR LOGIC CHECKS ARE VERIFIED.
- 8. EBW AND RANGE SAFETY PULSE SENSOR SELF TEST CIRCUIT IS VERIFIED.
- THE EBW AND RANGE SAFETY FIRING UNITS CHARGING TIMES AND VOLTAGE LEVELS ARE VERIFIED.
- 10. EBW BLEED CIRCUITS ARE VERIFIED.
- ALL FIRING UNITS ARE CHARGED, FIRE COMMANDS ARE ISSUED, AND THE PROPER PULSE SENSOR RESPONSE IS VERIFIED.
- 12. THE RANGE SAFETY ARM AND ECO., PROPELIANT DISPERSION, AND SYSTEMS OFF COMMANDS ARE ISSUED AND PROPER RESPONSES ARE VERIFIED.
- 13. THE RANGE SAFETY POWER INTERNAL/EXTERNAL CIRCUITS ARE VERIFIED.
- 14. THE RANGE SAFETY SAFE AND ARM DEVICE IS VERIFIED.
- 15. PROPELLANT UTILIZATION SUB-SYSTEM IS VERIFIED.

A	12-4-	72 UPDATE FOR T	est spec & criteria requiremen	IS James	in Zana
S. REV.	DATE		REASON	Contractor Approval	KSC Approvol
7 C 1990 T 1	MACTOR A	PPROVAL	8. ORGANIZATION	S. DATE	
S/G.	S. IKE	GAMI	MCDONNELL DOUGLAS	1-31-72	
10 MASA	#SC APP	POVAL	11. ORGANIZATION	12. APPROVAL DATE	
S/D.	R. JON	IES	LV-GDC-23	2-1-72	
			*		

APOLLO/SATURN TEST AND OPERATIONS CATALOG (SHEET 2)

PAGE 2 OF 2

2. KRC TEST NUMBER
V-21538

SUBBLIGHTRICAL SUBSYSTIM CHECKRIT (AUTOMATIC)

14 COMPUTER PROC. INDENTIFICATION
16 SUPPORT REQUIREMENTS

16 SUPPORT REQUIREMENTS

RD-21401

17. OTHER APPLICABLE REFERENCE DOCUMENTATION

V-21262 SIVB POWER SETUP PROCEDURE

S. ITEM CONTINUATION

KSC	TEST	SPEC	€ CF	ITERIA	REQMTS	(1B86721)
0.2	2.1.	1.1			0.2.2.1	1225
	2.1.				0.2.2.1	
	2.1.1				0.2.2.1	
0.2	2.1.1	1.4			0.2.2.3	3.1.1
0.2.	2.1.	1.5			0.2.2.3	5.1.2
0.2.	2.1.1	1.6			0.2.2.3	
0.2	2.1.1	1.7			0.2.2.3	
	2.1.1				0.2.2.3	
	2.1.1				0.2.2.3	
	2.1.1				0.2.2.3	
	.2.1.1 .2.1.1				0.2.2.5	
	2.1.1				0.2.2.5	
	2.1.2				0.2.2.5	2 2 2
	2.1.2				0.2.2.5	7 3
	2.1.2				0.2.2.5	
	2.1.2				0.2.2.5	
	2.1.2					
0.2.	2.1.2	.1.6				
0.2.	2.1.2	2.2.1				
0.2.	2.1.2	2.2.2				
0.2.	2.1.2	2.2.3				
0.2.	2.1.2	2.2.4				

KSC OPERATIONS APOLLO SATURN TEST AND OPERATIONS CATALOG SHEET	PAGE 1	
*용상한 한 연습은 100mm	2 KSC TEST NUMBE V-21564	R
HOUSES JOLTAGE DETECTORS, VEHICLE & GROUND; INSTALLATION,	AS-513 SL-206 & SL	BS
50° 19.60° -E1		
TO RECYCLE RECPER INSTRUCTION FOR INSTALLING, REMOVING, MAINTA INDUISED VOLTAGE DETECTORS IN 10 STAGE. TO PROVIDE OPERATING I REAR VOLTAGE MONITORS INSTALLED ON 280' LEVEL OF MOBILE LAUNCH	N2 I KOCI I ONZ I	RATING OR .
EST DESCRIPTION EQUIPMENT STATUS CONFIGURATION		
THIS TEST DOES X DOES NOT CONTAIN HAZARDOUS OPERATIONS.		
THIS PROCEDURE IS DIVIDED INTO TWO PARTS.		and the second
PART A PROVIDES FOLLOWING FOR STAGE DETECTORS:		
CALIBRATION INSTRUCTIONS AND FREQUENCY INSTRUCATION INSTRUCTIONS MAINTENAME INSTRUCTIONS CERATING INSTRUCTIONS REMOVAL INSTRUCTIONS		
PART B PROVIDES FOLLOWING FOR GROUND DETECTORS:		
CPEPATING INSTRUCTIONS		
SUPPORT REQUIREMENTS: NONE		
DIFIGURATION: VEHICLE DETECTORS TO BE INSTALLED PRIOR TO TR	ANSFER TO PAD	• () () ()
		•
MSFC REQUIREM TM-011-001-2H 13.0.1.2		
Tr.	5 7 7-100	-W 220 ()
B 147 15 7 REVISE MSFC REQUIREMENTS	12 June 1000	TR. VACA
1 11/3 / 1 REVISE BLOCKS 3/8 15 1/4 1/4 1/4 1/4	E Toute	KSC Approval
FE. CATE PEASON C	E	NOC Approval
JE Jan 18 18M/K73	9/20/72	
MATTERSO AFFECUAL III ORGANIZATION IZ. AP	PROVAL DATE	

•		
APOLLO SATURN TEST AND OPERATIONS CATALOG SMEET 2)		F438_2_2=27_2
1 ILST TITLE	:	V-01564
INDUCED VOLTAGE DETECTORS, VEHICLE & GROUND; INSTALLAT OPERATION AND MAINTENANCE	ICN,	- FESCES + TV S = 200
8 ML 1,2 8/OR 3		2 NEW - 1.0 -01R
16 SUPPORT REQUIREMENTS		
NONE		
•		
•		
DETECTORS (IVD)		
18. ITEM CONTINUATION		
the formation of the contraction		

KSC OPERATIONS APOLLO SATURN TEST AND OPERATIONS CATALOG SHEET	PAGE 1 OF 2
THE THE CONTRACT OF THE CONTRA	2. KSC TEST NUMBER V-21565
LUT NETWORKS ML-1 PURGE VEPIFICATION	GSE

4 TEST 28. ELTIVES

TO VERIFY A POSITIVE PRESSURE WITHIN ALL PURGED ELECTRICAL ENCLOSURES THAT API THE RESPONSIBILITY OF THE LUT NETWORKS GROUP.

TERT LESCH PTION EQUIPMENT STATUS CONFIGURATION

TO DOES NOT CONTAIN HAZARDOUS OPERATIONS. THIS TEST DOES

THIS PROCEDURE WILL BE ACCOMPLISHED BY:

- 1. SECURING AND SEALING ELECTRICAL ENCLOSURES TO FACILITATE POSITIVE PRESSURE BUILDUP WITHIN THE ENCLOSURE.
- 2. VERIFYING EXISTENCE OF SAID POSITIVE PRESSURE.

THE VERIFICATION WILL BE ACCOMPLISHED PRIOR TO EACH OF THE FOLLOWING MAJOR TESIS:

- 1. MOVE TO PAD
- 2. HYPERGOLIC LOAD
- 4. LAUNCH COUNTDOWN .

STAC . DATE	REASON	Contractor Approval	KSC Approvo
ATHA TOR APPROVAL	8. ORGANIZATION	9. DATE	
4. L. McGranev	BATC 5-8730	10/6/72	
MASA ES. APPROVAL	11. ORGANIZATION	12. APPROVAL DATE	
P. Overstreet	LV-GDC-22	10/6/22	

+		•				1	
APOLLO	SATURN JEST	AND OPERATION	S CATALOG (SHE	ET 2)	P.	ACE CF	2
18 *1*CE	ORKS ML-1 PUP			<u>, , , , , , , , , , , , , , , , , , , </u>	V-2	TEST NUMBER 21565 CETIVITY	
YL-1	X/A	R PROC. INDENTIFE	CATION			HOURS	
S SUPPORT REGULA	EMENTS						
50 PSI (IN ₂ PURGE						
			•				
			•				

18 ITEM CONTINUATION

APC	LLO/SATURN TEST	CSC OPERATIONS T AND OPERATIONS CATALOG SHEET	PAGE 1 OF 2
TEST TITLE	***************************************		Z. REC TEST NUMBER
			V-21572
	MOBILE LAUNCHE	ER PHASEDOWN ELECTRICAL	S. EFFECTIVITY
			GSE-LC 39-3
TEST OBJECT			
The	objective of the	is task is to place the Mobile L	auncher in a downmode status
OLILL	Onotine am text	20210 0 22 002 203	
	PTION/EQUIPMENT STA	THE CONFIGURATION	
TEST DESCRI	INTIOM/EQUIPMENT SIN	185/COMPIGURATION	<i>I</i>
THIS TEST	DOES DO	DOES NOT CONTAIN HAZARDOUS OPERATIO	ons.
Ting	following is a	list of tasks to be performed:	
Alle	TOTTOWING IS a .	TISO OF ORSES OF DELIGIMON.	
1.	. Inspect and cl	heck all ESE cables.	
2.	. Seal all cable	e connections and/or unconnected	cable ends.
3.	. Downmode mobil	le launcher equipment mounted in	distributor racks.
4	. Downmode port	able CAT cables and equipment.	Transfer interchangeable
	items to other		
5	items to other Downmode all levels includ	r programs. umbilical tower equipment on the ing pneumatic consoles, crossove	. 220, 240, & 260 foot
	items to other Downmode all levels includ power distrib	r programs. umbilical tower equipment on the ing pneumatic consoles, crossove utor boxes.	220, 240, & 260 foot r junction boxes, and
	items to other Downmode all levels includ power distrib	r programs. umbilical tower equipment on the ing pneumatic consoles, crossove	220, 240, & 260 foot r junction boxes, and
	items to other Downmode all levels includ power distrib	r programs. umbilical tower equipment on the ing pneumatic consoles, crossove utor boxes.	220, 240, & 260 foot r junction boxes, and
	items to other Downmode all levels includ power distrib	r programs. umbilical tower equipment on the ing pneumatic consoles, crossove utor boxes.	220, 240, & 260 foot r junction boxes, and
	items to other Downmode all levels includ power distrib	r programs. umbilical tower equipment on the ing pneumatic consoles, crossove utor boxes.	220, 240, & 260 foot r junction boxes, and
	items to other Downmode all levels includ power distrib	r programs. umbilical tower equipment on the ing pneumatic consoles, crossove utor boxes.	220, 240, & 260 foot r junction boxes, and
	items to other Downmode all levels includ power distrib	r programs. umbilical tower equipment on the ing pneumatic consoles, crossove utor boxes.	220, 240, & 260 foot r junction boxes, and
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	items to other Downmode all levels includ power distrib	r programs. umbilical tower equipment on the ing pneumatic consoles, crossove utor boxes.	220, 240, & 260 foot r junction boxes, and
	items to other Downmode all levels includ power distrib	r programs. umbilical tower equipment on the ing pneumatic consoles, crossove utor boxes.	220, 240, & 260 foot r junction boxes, and
	items to other Downmode all levels includ power distrib	r programs. umbilical tower equipment on the ing pneumatic consoles, crossove utor boxes.	220, 240, & 260 foot r junction boxes, and
	items to other Downmode all levels includ power distrib	r programs. umbilical tower equipment on the ing pneumatic consoles, crossove utor boxes.	220, 240, & 260 foot r junction boxes, and
	items to other Downmode all levels includ power distrib	r programs. umbilical tower equipment on the ing pneumatic consoles, crossove utor boxes.	220, 240, & 260 foot r junction boxes, and
	items to other Downmode all levels includ power distrib	r programs. umbilical tower equipment on the ing pneumatic consoles, crossove utor boxes.	220, 240, & 260 foot r junction boxes, and
	items to other Downmode all levels includ power distrib	r programs. umbilical tower equipment on the ing pneumatic consoles, crossove utor boxes.	220, 240, & 260 foot r junction boxes, and
6	items to other. Downmode all levels include power distrib Establish sur	r programs. umbilical tower equipment on the ing pneumatic consoles, crossove utor boxes. veillance plan and requirements.	220, 240, & 260 foot rejunction boxes, and
6 REV. DA	items to other. Downmode all levels includ power distrib Establish sur	r programs. umbilical tower equipment on the ing pneumatic consoles, crossove utor boxes. veillance plan and requirements.	220, 240, & 260 foot rejunction boxes, and
REV. DA	items to other. Downmode all levels include power distrib Establish sur	r programs. umbilical tower equipment on the ing pneumatic consoles, crossove utor boxes. veillance plan and requirements.	Contractor Approved KSC Approve
REV. DA	Downmode all levels includ power distrib Establish sur	r programs. umbilical tower equipment on the ing pneumatic consoles, crossove utor boxes. veillance plan and requirements. REASON B. ORGANIZATION McDonnell Douglas	Contractor Approved S. DATE 11/17/72
REV. DA	Downmode all levels includ power distrib Establish sur	r programs. umbilical tower equipment on the ing pneumatic consoles, crossove utor boxes. veillance plan and requirements.	Contractor Approved KSC Approve

APOLLO	SATURN TEST AND OPERATIONS CATALOG (SI	HEET 2)	PAGE 2 OF 2
TEST TITLE			2, KSC TEST NUMBER
	DIVIN A ADMINISTRATION OF THE PROPERTY AND		V-21572
MO	BILE LAUNCHER PHASEDOWN ELECTRICAL		1
LOCATION	14. COMPUTER PROC. INDENTIFICATION		GSE LC 39-3
ML #3	None		50 Hours
SUPPORT REQUIRE	MENTS		
None			
	•		
	E REFERENCE DOCUMENTATION		
MDAC - D	PS's, CID's 40ML2377, 40ML2384		
Main Equ	ipment Index Drawing 40M57101		
. ITEM CONTINUATIO	N		es in the manufacture and the contract of the
Configur	ation		
Post 512	Launch, No S-IVB Vehicle		
			and with a Grand state
NASA-KSC	Authorization	•	
T.VTMO/2	30-72-MDAC-36, August 8, 1972		
11-110/3	70-12-2010-10; nagas 0; 17/2		
	ATT		

KSC OPERATIONS APOLLO SATURN TEST AND OPERATIONS CATALOG SHEET	PAGE 1 OF 2
T SEST TITLE	2. KSC TEST NUMBER V- 21574
DEE-60 PERIODIC PREVENTIVE MAINTENANCE AND ELECTRONIC CHECKS ASIC, OF ACQUISTMENTS	SE - LC39

4 TEST SSUESTONES

THE CBUECTURE OF THIS PROCEDURE IS TO PROVIDE A SYSTEM OF PERIODIC CHECKS AND ALIGNMENTS OF THE DEE-6C SYSTEM THAT WILL REDUCE THE NUMBER OF DEE-6 SYSTEM FAILURES DURING REMICLE SUPPORT TO A MINIMUM.

S TEST DESCRIPTION EQUIPMENT STATUS CONFIGURATION

THIS TEST DOES DOES OF CONTAIN HAZARDOUS OPERATIONS.

THIS TEST CONSISTS OF MULTIPLE DEE-6 SUBSYSTEM CHECKS OR MAINTENANCE TASKS. PARTS II, III, IV AD VI ARE PERFORMED PERIODICALLE - BI-WEEKLY (EMERY TWO WEEKS), QUARTERLY, SEMI-ANNUALLY AND ANNUALLY.

PART V CONSISTS OF ELECTRONIC CHECKS AND/OR ADJUSTMENTS, PART V IS NOT PERIODICALLY SCHEDULED. NORMALLY, APPROPRIATE SECTIONS OF PART V ARE PERFORMED AS A RESULT OF A MAINTENANCE DIAGNOSTIC PROGRAM DETECTING AN ABNORMAL SITUATION OR OUT OF TOLERANCE CONDITION WITHIN THE SPECIFIED SUBSYSTEM UNDER TEST. SECTIONS OF PART V WILL ALSO BE PERFORMED IN CONSUMNCTION WITH VEHICLE EVENTS, SUCH AS SV/ML PAD TRANSFER.

ANY PERIODICALLY SCHEDULED PART OR ITS SECTIONS MAY BE PERFORMED AT A GREATER FRE-DIENCY THAN SPECIFIED WITH SYSTEMS ENGINEER AND LVO-ENG CONCURRENCE. ANY SECTION OF PART Y MAY BE PERFORMED AS REQUIRED WITH SYSTEMS ENGINEER AND LVO-ENGINEERING CONCURRENCE.

CONFIGURATION: N/A

TEST REQUIREMENTS

PHASE: N/A

A 1-21-74 REVISED BLOCK		B. Gontinto 1800
5 REV. CATE	REASON	Contractor Approval KSC Approval
L'A Minute calor of the	B CRGANIZATION IBM-M82	1/26/73
TO MASA PEL APPROVAL	11. ORGANIZATION L. J Cro. C 2.7	12. APPROVAL DATE 1 / 2 / / 2 / 2 / 2 / 2 / 2 / 2 / 2 / 2

APOLLO/SATURN TEST AND OPERATIONS CATALOG (SHEET 2)	PAGE 2 OF 2
I. TEST TITLE DEE-6C PERIODIC PREVENTIVE MAINTENANCE AND ELECTRONIC CHECKS AND/OR ADJUSTMENTS	2. KSC TEST NUMBER V=21574 3. EFFECTIVITY GSE - LC39
13. LOCATION 14. COMPUTER PROC. INDENTIFICATION LC-39 N/A	2 MEN, AS REQUIRED
16. SUPPORT REQUIREMENTS	
INTERSTAGE: NONE	
OFF-COMPLEX: NONE	
ON-COMPLEX: OIS A/C POWER QUALITY ASSURANCE	
n de la Maria de Maria de la Maria de La maria de la	
17. OTHER APPLICABLE REFERENCE DOCUMENTATION	
N/A	
18. ITEM CONTINUATION	
property of the first of the second of the s	
	•

PAGE 1 CF 2 KSC OPERATIONS APOLLO SATURN TEST AND CPERATIONS CATALOG SHEET V-21582 S-IE STAGE EBW PULSE SENSOR CHECKOUT PROCEDURE EFFICTIVITY 207 & Subs

TO VERIFY THE FUNCTIONAL OPERATION OF THE PULSE SENSORS USED IN THE RETROROCKET, SEPARATION, AND PROPELLANT DISPERSION SYSTEMS.

N' DOLS NOT CONTAIN HAZARDOUS OFERATIONS. THIS TEST ! TOOES

P DESCRIPTION EQUIPMENT STATUS LENGTS FAT ON

Yerity that the EDW pulse sensors operate at the proper voltage level. Each pulse sensor will be checked to insure that it will accept a 2000 VDC pulse for ten consecutive firings (Fire Test) and that it will reject an 1800 VDC pulse for ten consecutive firings (No-Fire Test). If a pulse sensor cannot meet these criteria, it will be adjusted as required and the Fire & No-Fire Tests will be The test will be performed with the pulse sensors installed on the stage but provisions are made to remove the pulse sensor, if necessary, to incilitate adjustment.

At the conclusion of the Fire & No-Fire Tests, an EBW Pulse Sensor Functional Test will be performed.

PHASE - III

- KT - 90, - 10 EA

MFSC REQUIREMENTS

	Chemical Commencer Commenc	
	Na hamilia	
	REASON	Correct Agency (SCA 1992
		German Assessed 1950 A 1502
ONTHAUTON AFFRONAL ECTION	REASCH	905ATE
CONTRACTOR STROVAL ELICAL CONTROLLANDS APPROVAL	REASON 8. ORGANIZATION	
DEV DATE CONTACTOR APPROVAL ELICA COOPS APPROVAL ANALYSE APPROVAL COOPS APPROVAL COOPS APPROVAL COOPS APPROVAL	REASON	PARMILIA 13
CONTRACTOR STROVAL ELICAL CONTROLLANDS APPROVAL	CCSD ORGANIZATION LV-GDC-24	Propries 15
CEOTOTOCOL NATACISE APPROVAL CONTOCOL C	REASON	Promise 13

APOLLO SATURN YEST AND OPERATIONS CATALOG (SHEET 2)	PAGE 2 67 . 2
	21582
S-IB STAGE EBW PULSE SENSOR CHECKOUT PROCEDU	RE 207 & Subs
KB-1/VAB N/A	6 Hrs.
SIB Stage Power Off for Fire & No-Fire Test SIB OAT Power Off for Fire & No Fire Test SIB Stage Power On for Functional Test	

401102852-EBW Pulse Sensor Assembly 40M02332-Cal & Op Procedures for EBW Monitor System Test Set

40M01865 - EBW Monitor System AES 40M01915 - EBW Meintor System Assy.

40M03113 - EBW Palse Sensor ALS

16. ITEM CONTINUATION

KSC OPERATIONS PAGE 1 OF 2 APOLLO SATURN TEST AND OPERATIONS CATALOG SHEET TEST T. TEE W-21583 EFFECTIVITY Simulated Lightning Test - S-IB-12 Stage S-1B-12 * TEST CHIT! T .ES

To demonstrate adequate lightning protection design for the launch vehicle/Apollo-Soyuz hardware.

S TEST LESCHIFTICH EQUIPMENT STATUS CONFIGURATION

DOES NOT CONTAIN HAZARDOUS OPERATIONS. THIS TEST LECTES

This test will measure open circuit and common mode voltages induced in critical circuits and magnetic field intensities in selected zones of the S-IB-12 stage. These voltages and intensities will be generated by applying a controlled simulated lightning strike to the aft end of S-I2-12 stage. Resulting data will be analyzed to determine lightning protection adequacy.

The S-IB-12 stage will be configured and equipped for this test as specified by the MSFC S-IB- $\S2$ Lightning Test Plan.

MSFC Requirements

Cantinata Approval KSC Approval REASON & UNGANIZATION 8-15-74 CCSD 12. APPROVAL DATE I. ORGANIZATION 3/15/74 LV-GDC-24 D

APOLLO SATURN TEST AND OPERATIONS CATALOG (SHEET :	2) .	PAGE 2 OF 2
INTEST TITLE		2 ASC TEST NUMBER
Simulated Lightning Test - S-IB-12 Stage		y-21583
	٠.	3 ERNECTIVITY
	-	S-16-12
13 LOCATION LC-39 14 COMPUTER PROC. INDENTIFICATION		19 EST. TEST THE
VAB Transfer Aisle None		2 days
16 SUPPORT REQUIREMENTS		

KSC Safety Fire Support Medical Support

17 OTHER APPLICABLE PEFEPENCE DOCUMENTATION

KMI 1710 IB/SF KSC Safety Program K-V-053 Ground Safety Plan

The Committee of the Co

TO VERIFY THAT THE TCS AND/OR TCS POWER SUPPLY ARE FUNCTIONALLY OPERABLE AND ABLE TO PERFORM THEIR RESPECTIVE FUNCTIONS PRIOR TO INSTALLATION IN THE SYSTEM.

S TEST DESCRIPTION EQUIPMENT STATUS CONFIGURATION

THIS TEST [DOES (X) DOES NOT CONTAIN HAZARDOUS OPERATIONS.

.The TCS and/or TCS Power Supply will be configured on the test bench with fused interrupt boxes and appropriate jumpers.

Switching capability will be provided to simulate various input commands and voltage levels. TCS outputs will be recorded and evaluated to confirm proper counting sequences.

The TCS Power Supply voltage outputs will be verified and the voltage monitor circuits checked for proper upper and lower tolerance limits.

> TEST REQUIREMENTS: MSFC: N/A

	1	L			•	indian de la companya de la company La companya de la co
& PEV.			REASON		Contractor Approvat	KSC Approval
7/77. H.M.	Kimbrel	1/W.O. Brown		-	8-28-7	74
The state of the s	ACU.	des	LV-GDC-24	12	8/28/74	

APOLLO/SA	PACE 2 OF 2			
TERMINAL C	V-21584			
	Art T	180,480		AS 209 & SUBS
Elec. Lab - VAB	14. COMPUTER PROC. IND	ENTIFICATION		8 Hours
16 SUPPORT REQUIRENE	NTS		• • •	

NONE

NONE

18. ITEM CONTINUATION

APOLLO SATURN TEST AND OPERATIONS CATALOG SHEET (CONTINUATION SHEET)

1 TEST TITLE

FLIGHT CONTROL COMPUTER SUBSYSTEM TEST

-- 23029

3. EFFECTIVITY
AS-507 & SUBS

ITEM CONTINUATION

(CONTINUED) BLOCK 5

EQUIPMENT STATUS:

- A. THE FOLLOWING TEST EQUIPMENT WILL BE USED:
 - 1. INTERRUPT BOX-8 PIN-P/N JB2P0193 OR EQUIVALENT.
 - 2. INTERRUPT BOX-23 PIN-P/N JB2P0217 OR EQUIVALENT.
 - 3. INTERRUPT BOX-30 PIN-P/N JB2P0231 OR EQUIVALENT.
 - 4. INTERRUPT BOX-61 PIN-P/N JB2P0229 OR EQUIVALENT.
 - 5. INTERRUPT BOX-55 PIN-P/N JB2P0228 OR EQUIVALENT.
 - 6. DIGITAL VOLTMETER, HP3440, OR EQUIVALENT.
 - 7. SIMPSON 260.
- B. THE FOLLOWING PROCEDURES/TEST MUST BE COMPLETED PRIOR TO PERFORMING THIS TASKS: NONE

CONFIGURATION: FLIGHT CONTROL COMPUTER AND LVDC/LVDA INSTALLED IN LAUNCH VEHICLE.

APOLL	O/SATURN TE	ST AND OPERATIONS CATALOG SHEET (CONTINUATION	SHEET)	PAGE	_4_of_4_
. TEST	TITLE			2. KDC TEST	NUMBER
				V-23029)
FL	IGHT CONTRO	OL COMPUTER SUBSYSTEM TEST		S. EFFECTIV	
				AS-507	£ SUBS
TEM C	NOITAUNITNO				
REV	DATE	REASON	CONTR	APPVL	KSC APPVL
Α	05-27-68	CHANGE EFFECTIVITY	S/D A	CREMINS	S/G.W. ELY
Α.	05-27-00	CHANGE EFFECTIVELY	370.4.	CKLIMINS	3/G.W. CC1
В	06-28-68	CHANGE EFFECTIVITY	S/D.A.	CREMINS	S/G.W. ELY
С	06-26-68	UPDATE MSFC REQUIREMENTS, MODIFY BLOCK 5	S/D A	CREMINS	S/G.W. ELY
٠.	170-20-00	OPDATE PIST. REQUIREMENTS, MODIFT BEOCK	3/0.4.	CKUIIII	3/G.N. CL
D	10-30-68	UPDATE TO REFLECT ADDITIONAL TESTING	S/J.C.	BOSTICK	S/G.W. ELY
	1 22 62	PRIVICE SESSOTIVITY DELETE SOT E SUPE	6/16	BOSTICK	S/G.W. ELY
E	03-07-69	REVISE EFFECTIVITY, DELETE 507 & SUBS	5/0.0.	BUSTICK	5/G.W. ELI
F	03-07-69	REVISE EFFECTIVITY AND BLOCK 5	S/J.C.	BOSTICK	S/G.W. ELY
	1		6.46	LIE AKL EV	S/G.W. ELY
G	05-29-69	REVISE MSFC REQUIREMENTS	3/G.L.	WEAKLEY	3/G.W. EL1
Н	05-29-69	REVISE MSFC REQUIREMENTS	S/G.L.	WEAKLEY	S/G.W. ELY
I	01-09-70	REVISE MSFC REQUIREMENTS	S/D.A.	CREMINS	S/G.W. ELY
J	01-05-71	REVISE MSFC REQUIREMENTS	000	1-11-71	1 25"
		•	DA.C.	emin	K. W. Ely
			OFR 6	11 .	WAY -: 14/18/
ĸ	10-7-71	V-27192 CANCELLED, REMOVE REFERENCE TO THIS PROCEDURE	788	A refer for	H. W. Ely
	<u> </u>	TO TITTS PROCEDURE			No.

KSC FORM 23-338A (7/87)

KSC FORM 23-338A (7/87)

KSC OPERATIONS APOLLO SATURN TEST AND OPERATIONS CATALOG SHEET	PAGE
TEST FIFLE	Z. KBC TEST NUMBER V-23030
CONTROL/EDS RATE GYRO AND CONTROL SIGNAL PROCESSOR SUBSYSTEM TEST (CTC4)	3. EFFECTIVITY 512 & SUBS 206 & SUBS

4 TEST OBJECTIVES

- A. TO EVALUATE THE OPERATION OF THE CONTROL/EDS RATE GYRO AND CONTROL SIGNAL PROCESSOR AS SUBSYSTEM IN THE LAURCH VEHICLE ENVIRONMENT.
- B. TO FUNCTIONALLY VERIFY THE OPERATION OF THE CONTROL/EDS RATE GYRO AND CONTROL SIGNAL PROCESSOR.

5 TEST DESCRIPTION EQUIPMENT STATUS CONFIGURATION

THIS TEST 1 DOES

X DOES NOT CONTAIN HAZARDOUS OPERATIONS.

SESCRIPTION:

- A. THE EXCESSIVE RATE SWITCH LEVELS ARE ASCERTAINED.
- B. THE COMPARATOR SET LEVELS ARE ASCERTAINED.
- C. A TIMED RAMP INPUT WILL BE APPLIED AND A DELTA RATE OUTPUT WILL BE EVALUATED.
- D. THIS TEST WILL BE PERFORMED AUTOMATICALLY.

EQUIPMENT STATUS:

- A. THE FOLLOWING TEST EQUIPMENT WILL BE USED: N/A
- 8. THE FOLLOWING PROCEDURES/TEST MUST BE COMPLETED PRIOR TO PERFORMING THIS TASK:
 - 1. V-23153 CONTROL/EDS RATE GYRO RAMP GENERATOR CALIBRATION
 - 2. V-23155 CONTROL/EDS RATE GYRO AND CONTROL SIGNAL PROCESSOR POLARITY TEST

CONFIGURATION: A. FLIGHT CONTROL SUBSYSTEM INSTALLED IN LAUNCH VEHICLE.

Prist: 111

TEST REQUIREMENTS SEE BLOCK 18

1				
ī	8/27/74 REVISED MSFC	PEQUIREMENTS	C R. Ramey	An El
	4/20/2 EFFECTIVITY C	HANGE, REVISE MSFC REQ'MTS	A. 4. to 4/2	Heorge V; Ely
<u> </u>	. 11 : PEVISE BLOCKS		S/D. CREMINS S/G. WEAKLEY	S/G. ELY
==	TI IS 9 SHOATE MSFC P		S/G. WEAKLEY	S/G. ELY
	. 14/9 SPEVISE MOFC F	EQUIREMENTS	S/J. BOSTICK	S/G. ELY
	11/1/8 UPDATE TO REF	LECT LATEST TEST CONFIGURATION MENT NUMBER	S/D. CREMINS	S/G. ELY
-		. ELK. 5; ADD MSFC REQ'MTS (504)	S/D. CREMINS	S/G. ELY
4 85 2	DATE	REASON	Contractor Approval	KSC Approval
1.5	THATTUR APPROVAL TO SEEMING	a OHSANIZATION IBM - 918	2 JANUARY 196	8
	LAS APPROVAL	11 OHGANIZATION	12. APPROVAL DATE	
5.1	G. W. ELY	LV-GIX-33	1/3/68	r Singa sa

APOLLO/SATURN TEST AND OPERATIONS CATALOG (SHEET 2)	PAGE 2 OF 2
1. TEST TITLE CONTROL/EDS RATE GYRO AND CONTROL SIGNAL PROCESSOR SUBSYSTEM TEST (CTC4)	2. KSC TEST NUMBER V-23030 3. EFFECTIVITY 512 & SUBS 206 & SUBS
15. LOCATION 14. COMPUTER PROC. INDENTIFICATION CTC4 - EDS/CRG TEST	4 MEN - 1.0 HOURS

S SUPPORT REQUIREMENTS

INTERSTAGE:

IU GROUND AND STAGE POWER

SIVB STAGE POWER

OFF-COMPLEX: N/

ON-COMPLEX:

FACILITY COMMUNICATIONS (OIS)

17. OTHER APPLICABLE REFERENCE DOCUMENTATION

NONE

18. ITEM CONTINUATION

(CONTINUED FROM BLOCK 5)

TEST REQUIREMENTS

MSFC: 7921601

. TM-011-001-2H

0.3.1.2.1.2.1 0.3.1.2.1.2.1.1 0.3.1.2.1.2.1.2 0.3.1.2.1.2.1.3 0.3.1.2.1.2.1.4 0.3.1.2.1.2.1.5

0.3.1.2.1.3.1

KSC OPERATIONS PAGE _____OF ___2___ APOLLO/SATURN TEST AND OPERATIONS CATALOG SHEET KSC TEST NUMBER V-23155 CONTROL/EDS RATE GYRO AND CONTROL SIGNAL PROCESSOR POLARITY EFFECTIVITY 512 & SUBS 206 & SUBS

TEST OBJECTIVES

TO VERIEY THAT THE CONTROL/EDS RATE GYRO/CONTROL SIGNAL PROCESSOR INPUT/OUTPUT POLARITIES APE COMPATIBLE WITH THE VEHICLE FLIGHT CONTROL SYSTEMS POLARITY.

(THIS TEST IS TO BE PERFORMED WITHIN THE SANE SHIFT, OR CONSECUTIVE SHIFTS, AND IMMEDIATELY PRIOR TO FLIGHT CONTROL SYSTEMS GAIN TEST CTC1/CTB1)

5. TEST DESCRIPTION EQUIPMENT STATUS CONFIGURATION

THIS TEST DOES Z DOES NOT CONTAIN HAZARDOUS OPERATIONS.

DESCRIPTION:

- A. THE CONTROL/EDS RATE GYRO UNIT WILL BE PHYSICALLY ROTATED ABOUT ITS THREE (3) MAJOR AXES TO COORDINATE AND DOCUMENT INPUT/GUTPUT RELATIONSHIPS.
- 5. VERIFICATION OF POLARITY IS DEPENDENT UPON SATISFACTORY POLARITY COORDINATION BETWEEN THIS TEST AND THE PHI DOT (0) MEASUREMENTS, THE VALVE CURRENT (10) MEASUREMENTS, AND THE HYDRAULIC ACTUATOR POSITION MEASUREMENTS OF THE SIC/SIB A1 PORTION OF THE SYSTEMS GAIN TEST (CTC1/CTB1).

EQUIPMENT STATUS:

- A. THE FOLLOWING TEST EQUIPMENT WILL BE USED: N/A
- B. THE FOLLOWING PROCEDURES/TEST MUST BE COMPLETED PRIOR TO PERFORMING THIS TASK: CONTROL/EDS RATE GYRO AND CSP POWER VERIFICATION RAMP GENERATOR AND MEASURING CALIBRATION, V-23153.

CONFIGURATION: FLIGHT CONTROL SUBSYSTEM INSTALLED IN LAUNCH VEHICLE.

PHASE: 111

TEST REQUIREMENTS . MSFC: 7921601

MSFC: TM-011-001-2H B.1.1.1.1.2

0.3.1.2.1.5.1 0.3.1.2.0.3.1

	D. A. CRE		IBM - 916		JANUARY 2, 1968	
	" MA . TUA APP		B GRGANIZATION	1	DATE	
264	DATE		REASON		Centracter Approval	KSC Approval
ź.	10/31/8	UPDATE TO REF	FLECT EQUIPMENT STATUS		S/J. BOSTICK	S/G. ELY
5	11/19/8				S/J. BOSTICK	S/G. ELY
C			VERIFICATION CHECK CHG. EFF		S/J. BOSTIC	S/G. ELY
Ĺ	19/15/9	UPLATE MSFC F	REQUIPMENTS		S/D. CREMINS	S/G. ELY
Ε	4/26/2	CHANGE EFFECT	TIVITY, REVISE BLOCKS 4, 5		The theaten the	Heory W. Ely
F	5/27/74	REVISED MSFC	REQUIREMENTS		CR Ramey	H. Z. El

	C.J.	
APOLLO/SATURN TEST AND OPERATIONS CATALOG (SHEET 2)	PAGE 2 OF 2	
I. TEST TITLE CONTROL/EDS RATE GYRO AND CONTROL SIGNAL PROCESSOR POLARITY	Z. KBC TEST NUMBER V-23155	
TEST	3. EFFECTIVITY 512 & SUBS	
13. LOCATION 14. COMPUTER PROC. INDENTIFICATION LC-39 N/A	4 MEN - 4 HOURS	

INTERSTAGE: .

IU GROUND AND STAGE POWER

IU MECHANICAL

IU ELECTRICAL SIVB STAGE POWER

OFF-COMPLEX:

N/A

ON-COMPLEX: .

QUALITY ASSURANCE

FACILITY COMMUNICATIONS (015)

7. OTHER APPLICABLE REFERENCE DOCUMENTATION

NONE

297

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APOLLO/SATURN TEST AND OPERATIONS CATALOG SHEET

1 YEST TITLE
CONTPOL/FDS RATE GYPO WHEEL SPEED TEST

CONTPOL/FDS RATE GYPO WHEEL SPEED TEST

CONTROL FOR THE CONTROL FOR THE CONTROL SPEED TEST

CONTROL FOR THE CONTROL FOR

A TEST WHILL HIVES

TO EVALUATE GYRO WHEEL BEARING CONDITION BY THE MEASUREMENT OF WHEEL ACCELERATION PARAMETERS.

TEST DESCRIPTION EQUIPMENT STATUS CONFIGURATION

THIS TEST TOOES

IXI DOES NOT CONTAIN HAZARDOUS OPERATIONS.

DESCRIPTION:

A BREAKOUT BOX WILL BE CONNECTED TO CSP TEST PLUG J7 IN THE IU. ALL OTHER CSP & CRG CABLES WILL BE VERIFIED TO BE IN FLIGHT CONFIGURATION. AN OSCILLOSCOPE (BATTERY POWERED) WILL BE PREPARED FOR USE.

THE CONTROL/EDS RATE GYROS AND CONTROL SIGNAL PROCESSOR WILL BE ENERGIZED AND WARMED UP FOR AT LEAST 15 MINUTES PRIOR TO BEGINNING THE WHEEL SPEED RUN-UP AND RUN-DOWN TESTING.

TESTING WILL BE ACCOMPLISHED BY MONITORING EACH GYRO WHEEL SPEED SENSOR INDIVIDUALLY AT THE J7 BREAKOUT BOX UTILIZING THE PORTABLE OSCILLOSCOPE. THE CRG SUBSYSTEM WILL BE ENERGIZED FOR EACH GYRO AND THE TIME REQUIRED TO REACH SYNCHRONOUS SPEED WILL BE MEASURED AND RECORDED. THE CRG SUBSYSTEM WILL BE DE-ENERGIZED FOR EACH GYRO AND THE TIME INTERVAL BETWEEN A TWO CYCLE DISPLAY AND A ONE CYCLE DISPLAY (COAST TIME BETWEEN 100 RPS AND 50 RPS) WILL BE RECORDED.

EQUIPMENT STATUS:

- A. THE FOLLOWING TEST EQUIPMENT WILL BE USED:
 - 1. INTERRUPT BOX-39 PIN-P/N FC6004 OR EQUIVALENT.
 - OSCILLOSCOPE, BATTERY POWERED, TEKTRONIX MODEL 422 OR EQUIVALENT.
 - 3. STOP WATCH WITH 0.2 SECOND GRADUATION.
- B. THE FOLLOWING PROCEDURES/TEST MUST BE COMPLETED PRIOR TO PERFORMING THIS TASK: N/A

PHASE: VA

TEST REQUIREMENTS S-IB

TEST REQUIREMENTS S-V

MSFC: 7921601

MSFC: 7916404

0.3.1.2,1.1.1

0.3.1.2.1.1.1

0.3.1.2,1.1.2

0.3.1.2.1.1.2

(CONTINUED IN BLOCK 18)

A 4/26/2 EFF. C	HANGE, REVISE BLOCK 5 MSFC REQ'MT	S The to 5/4/2 King V. Ely
6. REV. DATE	REASON	Contractor Approval KSC Approval
7. CONTRACTOR APPROVAL	B. ORGANIZATION	9. DATE
S/ G. L. WEAKLEY	IBM - 918	6/23/69
10 NASA-KSC APPROVAL	11. ORGANIZATION	12. APPROVAL DATE
S/ C. A. WHITESIDE	LV-GDC-33	6/23/69

APOLLO/SATURN TEST AND OPERATIONS CATALOG (SHEET 2)	PAGE 2 OF 2
1. TEST TITLE	2. KSC TEST NUMBER V-23197
CONTROL/EDS RATE GYRO WHEEL SPEED TEST	€ EFFECTIVITY 512 & SUBS
13 LOCATION 14. COMPUTER PROC. INDENTIFICATION N/A N/A	5 MIN = 1.5 10098

16 SUPPORT REQUIREMENTS

INTERSTAGE:

IU GROUND AND STAGE POWER

OFF-COMPLEX:

N/A

ON-COMPLEX:

QUALITY ASSURANCE

FACILITY COMMUNICATIONS (015)

IU ELECTRICAL

DDAS

17. OTHER APPLICABLE REFERENCE DOCUMENTATION

NONE

18 ITEM CONTINUATION

(CONTINUED FROM BLOCK 5)

CONFIGURATION: A. CONTROL/EDS RATE GYROS AND CONTROL SIGNAL PROCESSOR INSTALLED

IN LAUNCH VEHICLE.

KSC FORM 23-338 (7:67)

1

KSC OPERATIONS AFOLLO SATURN TEST AND OPERATIONS CATALOG SHEET		PAGE OF
The Market of the Control of the Co	2	KSC TEST NUMBER
STHIZH STABILIZED PLATFORM DRIFT TEST	3	EFFECTIVITY
	- 1	AS REQUIRED

TO SETAIN 9485 A.D ACCELEROMETER PERFORMANCE INFORMATION IN THE HIGH BAY BRILE TO POLL OUT.

- COES X DOES NOT CONTAIN HAZARDOUS OPERATIONS.

و المحارد على المعرفية مستنفست الدين والرئيس المدارية المحارد الذي المدارد المدارد المدارد المدارد المدارد الم المحارد (Aleka (Alexandra) من المحارث المحارث المحارد المدارد المدارد المحارد المدارد المدارد المدارد المدار

HAVITED THE OUTPUTS OF THE THREE ACCELEROMETERS, WITH THE PLATFORM +Z PIVOT UP;

THE STABILIZED PLATFORM ALIGNMENT TURNED OFF, MEASURE THE DISPLACEMENT OF

THE STABILIZED PLATFORM FOR A FIXED PERIOD OF TIME. MOVE THE INERTIAL GIMBAL

TO ALGOE IN PITCH. MONITOR THE OUTPUTS OF THE THREE ACCELEROMETERS. MOVE

THE INERTIAL SIMBAL TO +X PIVOT UP THEN 45° IN YAW. MONITOR THE OUTPUTS OF

THE THREE ACCELEPOMETERS. TURN STABILIZED PLATFORM ALIGNMENT OFF AND MEASURE

INTERT OF THE THREE GYROS. MOVE THE INERTIAL GIMBAL BACK TO THE +X PIVOT UP POSITION.

WINITOR THE OUTPUT OF THE THREE ACCELEROMETERS. TURN ALIGNMENT OFF AND MEASURE

DRIFT OF THE THREE GYROS.

THE ACCELEROWETER DATA OBTAINED IS DRIFT, SCALE FACTOR, AND Y TO X AND Z TO X SET-OCCUPATION AND ACCELEROMETER SIDE BALANCE.

CONFIGURATION: ST-124M FUNCTIONAL TEST COMPLETED. OPTICAL ACCESS TO THE PLATFORM PRISMS IS REQUIRED FOR THIS TEST.

4-15E: 1:74

TEST REQUIREMENTS

MSFC: 7921601

0.3,1.1.2.1.1

					12 -	
- [3	-5/7174	REVISE TEST AN	D SUPPORT REQUIREMENTS	Theoris 19/14	16/1/1/20
:			PEVISE BLOCK 15		D. P. Buchan	Spile to
. :	. = E /.	7 A 7 E		REASON	Contractor Approval	KSC Approval
	5 5545 D. M.	Bucka	7/31/69	8 ORGANIZATION IEM - M66	9. DATE 7/31/69	i i i i i i i i i i i i i i i i i i i
	-	ti Li		11. ORGANIZATION LU-G-CK-11	7/31/67	
-				<u> </u>		

TEST TITLE ST-124M STABILIZED PLATFORM DRIFT TEST JS PERSONNER JS PER	, APOLLO/S	ATURN TEST AND OPERATIONS CATALOG	(SHEET 2)	P.A	GE _2OF _2
ST-124M STABILIZED PLATFORM DRIFT TEST AS REQUIRED AS R	1. 7667 THEE				
N/A 14 COMPUTER PROC. INDENTIFICATION N/A 15 SUPPORT REQUIREMENTS RD: 40092 INTERSTAGE: S-IVB STAGE POWER IU POWER OFF-COMPLEX: N/A ON-COMPLEX: GROUND POWER TIMING FLIGHT COMPUTER SYSTEM DDAS RCA 110A COMPUTERS Q.A. NONE	ST-124M STABIL	IZED PLATFORM DRIFT TEST	•	3 ECEEC	TIVITY
RD: 40092 INTERSTAGE: S-IVB STAGE POWER IU POWER OFF-COMPLEX: N/A ON-COMPLEX: GROUND POWER GSE MEASURING TIMING LCC MEASURING FLIGHT COMPUTER SYSTEM HP GAS DDAS RCA 110A COMPUTERS Q.A.				,	•
RD: 40092 INTERSTAGE: S-IVB STAGE POWER IU POWER OFF-COMPLEX: N/A ON-COMPLEX: GROUND POWER TIMING TIMING FLIGHT COMPUTER SYSTEM DDAS RCA 110A COMPUTERS OIS Q.A.				8 Hour	S - 8 MEN
INTERSTAGE: S-IVB STAGE POWER IU POWER OFF-COMPLEX: N/A ON-COMPLEX: GROUND POWER GSE MEASURING TIMING LCC MEASURING FLIGHT COMPUTER SYSTEM HP GAS DDAS RCA 110A COMPUTERS Q.A.		ENTS	*		
OFF-COMPLEX: N/A ON-COMPLEX: GROUND POWER GSE MEASURING TIMING LCC MEASURING FLIGHT COMPUTER SYSTEM HP GAS DDAS RCA 110A COMPUTERS Q.A.	RD: 40092				
ON-COMPLEX: GROUND POWER GSE MEASURING TIMING LCC MEASURING FLIGHT COMPUTER SYSTEM HP GAS DDAS RCA 110A COMPUTERS Q.A. OTHER APPLICABLE REFERENCE DOCUMENTATION NONE	INTERSTAGE:		•	**	
TIMING LCC MEASURING FLIGHT COMPUTER SYSTEM HP GAS DDAS OIS RCA 110A COMPUTERS Q.A. 17. OTHER APPLICABLE REFERENCE DOCUMENTATION NONE	OFF-COMPLEX:	N/A		•	
RCA 110A COMPUTERS Q.A. 7. OTHER APPLICABLE REFERENCE DOCUMENTATION NONE	ON-COMPLEX:	TIMING LCC FLIGHT COMPUTER SYSTEM HP	MEASURING GAS		
NONE 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1					
NONE 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1.					
NONE TO A STATE OF THE STATE OF		REFERENCE DOCUMENTATION			-
- 10 1 日本教 (1) (1) (1) (1) (1) (1) (1) (1) (1) (1)					1
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	IS ITEM CONTINUATION				
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	1.577.53	Burney Control Commence			
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그 그들 그 그는 그는 사람들이 하는 그 그는 그를 가는 것을 끊으면 없다.					

APOLLO	KSC SATURN TEST A	OPERATIONS NO CATALOG SHEET	PAGE _10F2
1. TEST TITLE			Z. KSC TEST NUMBER
			V-23220
ST-124M GYRO	ORIFT TEST	•	1
			AS REQUIRED
4 TEST OBJECTIVES			
TO MEASURE GY	O COLOTS	•	
10 / 12/10 / 1			
	*		
S TEST DESCRIPTION	EQUIPMENT STATUS	CONFIGURATION	(REPLACES IV-23180)
THIS TEST 🔲 D	OES XX DOES	NOT CONTAIN HAZARDOUS OPERATIONS	(REPLACES 1V-23180)
WITH STABILIZE AN INITIAL SP	ED PLATFORM ALI ACE FIXED REFER	GNMENT TURNED OFF, DISPLACEMEN ENCE POSITION FOR A CERTAIN TI	IT OF PLATFORM AXIS FROM ME PERIOD IS MEASURED.
LABORATORY FU	NCTIONAL TEST C	OMPLETE.	
CONFIGURATION	: N/A		

			TEST REQUIREMENTS
			TEST NEGOTIAN ICITYS
		MSFC: 7921601	MSFC: 7916404
		0.3.1.1.2.2 THRU	0.3.1.1.2.2 THRU
		0.3.1.1.2.2.3	0.3.1.1.2.2.3
			•
		Marie and the second of the second	
1			
*			
1 / 2. 2. 1.			ر ما المعادل ا المراجع المعادل المعاد
A 12-3-73	REVISE BLOCKS	5 5 AND 16	James GIA
6. REV. DATE	· · · · · · · · · · · · · · · · · · ·	REASON	Contractor Approval KSC Approval
7 CONTRACTOR APPR	OVAL	8. ORGANIZATION	9. DATE
~~2	1	10M 060	3/11/21
J. P. Duc	Lawara	IBM - 960	3/1/11
12 NASA NSC APPROV	AC)	11 ORGANIZATION	12. APPROVAL DATE
1 2		11-100-4	3/11/2
2/4	,	41-600-11	3/11/11

APOLLO/SAT	TURN TEST AND OPERATIONS C	ATALOG (SHE	ET 2)	-		PAGE 2	OF	2
. TEST TITLE					1	KSC TEST NUN 7-23220	BER	
ST-124M GYRO DRI	FT TEST		,		3	EFFECTIVITY AS REQUIR		
13. LOCATION	14. COMPUTER PROC. INDENTIFICAT	ION				EST TES" T		
LAB/VAB/1M6	N/A					3 MEN	E HR.	EACH
16. SUPRORT REQUIREMEN	iTS	•						
INTERSTAGE: NON	łE							
OFF-COMPLEX: NO	Æ							
ON-COMPLEX: NON	Æ .							
+ 1.	were .							
17. OTHER APPLICABLE P	REFERENCE DOCUMENTATION		· · · · · · · · · · · · · · · · · · ·		<u> </u>			
NONE	•							
18. ITEM CONTINUATION								

KSC OPERATIONS
APOLLO SATURN TEST AND OPERATIONS CATALOG SHEET PAGE _1__OF _2 KSC TEST NUMBER V-23221 1 TEST TITLE . EFFECTIVITY 27-12-4 PPISM ALIGNMENT TEST AS REQUIRED A TEST GBUEST VES TO JERIEV PRISM ALIGNMENT 5 TEST COLLEPTION EQUIPMENT STATUS/CONFIGURATION (REPLACES IV-23186) X DOES NOT CONTAIN HAZARDOUS OPERATIONS. DETERMINE THE INERTIAL PRISA'S ORIENTATION WITH RESPECT TO THE Y ACCELEROMETER MEASURING AXIS WITH MANUAL THEODOLITES. THIS TEST DOES ACCELERCMETER CALIBRATION PROCEDURE COMPLETED. CONFIGURATION: EQUIPMENT MUST BE IN LABORATORY IN TEST STAND. TEST REQUIREMENTS MSFC: 7921601 0.3.1.1.2.2.THRU 0.3.1.1.2.2.3 5/7/74 REVISE TEST AND SUPPORT REQUIREMENTS Contractor Approval REASON ORGANIZATION IBM - 960

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APOLLO SATURN TEST AND OPERATIONS CATALOG (SHEET 2)	PAGE 2 OF 3
APOLLO SATURN TEST AND OF ENAME	2. KSC TEST NUMBER
EST TITLE	V-23221
ST-124M PRISM ALIGNMENT TEST	AS REQUIRED
ST-124M PRISM ALIGNER	TOTAL TIME
LOCATION 14. COMPUTER PROC. INDENTIFICATION	4 MEN - 4 HOURS EACH
AB/VAB/IMD	
SUPPORT REQUIREMENTS	
INTERSTAGE: NONE	
OFF-COMPLEX: NONE	•
OFF-COMPLEX: NONE	
ON-COMPLEX: Q.A.	
•	
	4 °
17. OTHER APPLICABLE REFERENCE DOCUMENTATION	
and the control of t	
NONE .	
18. ITEM CONTINUATION	
18. ITEM CONTINUE.	•
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KSC OPERATIONS
APOLLO'SATURN TEST AND OPERATIONS CATALOG SHEET

2. KSC YEST NUMBER
V-23222

57-124M ALIGNMENT SYSTEM PERFORMANCE TEST

AS REQUIRED

TEST OBJECTIVES

TO LERISY THE PERFORMANCE AND TO ASSURE COMPATIBILITY BETWEEN PLATFORM AND ALIGNMENT SYSTEM.

S TEST DESCHIPTION EQUIPMENT STATUS/CONFIGURATION

(REPLACES IV-23187)

...

THIS TEST DOES (X) DOES NOT CONTAIN HAZARDOUS OPERATIONS.

EACH GYPO IS TORQUED A NUMBER OF DEGREES AND THE TIME OF RECOVERY IS RECORDED. THE GAINS OF ALL LOOPS IN THE ALIGNMENT SYSTEM ARE ADJUSTED FOR STABILITY IN ALL NUCES OF OPERATION. THE INERTIAL PLATFORM IS DRIVEN BY THE SIMULATOR TO AN ANGLE. THE AUGLE IS THEN VERIFIED BY OPTICAL MEASUREMENTS.

CONFIGURATION: EQUIPMENT MUST BE IN A LABORATORY IN TEST STAND

F-WEE: 1A, 18, & 11

TEST REQUIREMENTS

MSFC: 7921601 0.3.1.1

0.3.1.1.2.1 0.3.1.1.2.1.1 0.3.1.1.2.2 THRU

0.3.1.1.2.2.3

		1000
A 5/7/74 REVISE TEST A	ND SUPPORT REQUIREMENTS	Flower John Montal
S REV. DATE	REASON	Contractor Approval KSC Approval
T TONTRACTOR APPROVAL	B. ORGANIZATION	9. DATE
E 3 Buchana	IBM - 960	3/11/71
TO NATA COMPRESSIAL	11. ORGANIZATION	12. APPROVAL DATE
Some	LV-601-12	3/12/71
#11 F15-W 43-134 TV 67		

PAGE 2 OF 2 APOLLO/SATURN TEST AND OPERATIONS CATALOG (SHEET 2) . NSC TEST NUMBER TEST TITLE V-23222 ST-124M ALIGNMENT SYSTEM PERFORMANCE TEST EFFECTIVITY AS REQUIRED 15. EST. TEST TIME 14. COMPUTER PROC. INDENTIFICATION 13. LOCATION 4 MEN - 6 HR. EACH LAB/VAB/1M6 N/A 16. SUPPORT REQUIREMENTS INTERSTAGE: NONE OFF-COMPLEX: NONE ON-COMPLEX: Q.A. 17. OTHER APPLICABLE REFERENCE DOCUMENTATION NONE 18. ITEM CONTINUATION

KSC OPERATIONS
APOLLO SATURN TEST AND OPERATIONS CATALOG SHEET V-23223 ST-1241/32:1 RESOLVER TEST (STANDBY) . EFFECTIVITY AS REQUIRED 4 "ES" DB.ECTIVES TO VERIFY 32:1 RESOLVER OUTPUTS; SCALE FACTORS AND NULLS. S TEST DE DE PTION EQUIPMENT STATUS CONFIGURATION (REPLACES IV-23175) TODES NOT CONTAIN HAZARDOUS OPERATIONS. THIS TEST COSES SIMULATE VEHICLE MOVEMENT WITH THE TEST STAND AND RECORD GIMBAL ANGLE READOUTS. CONFIGURATION: N/A TEST REQUIREMENTS . MSFC: 7921601 0.3.1.1.2.2.3 5/7/74 REVISE TEST AND SUPPORT REQUIREMENTS REASON

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APOLLO/SATURN TEST AND OPERATIONS CATALOG (SHEET	2)	PA	s∈c	F	
ST-174/37:1 PESOLVER TEST (STANDBY)		V-232	QUIRED	*	
13 LOCATION 14. COMPUTER PROC. INDENTIFICATION			1 = 4.0	HOIDS	
LAB-VAB-1M6 N/A 16 SUPPORT REQUIREMENTS		1 4 11-11	1 - 7.0	110013	
INTERSTAGE: NONE					
OFF-COMPLEX: NONE	•				
ON-COMPLEX: Q.A.		ъ			
			•		
17 OTHER APPLICABLE REFERENCE DOCUMENTATION					
NONE					
18 ITEM CONTINUATION					
	•				
				1.1	

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A	POLLO/S		KSC OPERATIONS T AND OPERATIONS CATA	LOG SHEET	PAGE	OF
TEST TITL	. E	PORTON CONTRACTOR OF THE PERSON OF THE PERSO	[w. asta		2. KSC TEST NUM	969
			PLATFORM SYSTEM PRELIM		V-23224	
0	PERATIO	INS FOR LAB	ORATORY TESTING (STANDE	Y)	3. EFFECTIVITY	
					AS REQUIR	ED
EST DOJE	CCTIVES					
	TO PERFO		NG INSPECTION AND TO PR	EPARE THE SYST	EM FOR ELECTRI	CAL
			•	•		
rest DESC	CRIPTION'	EQUIPMENT STA	TUS/CONFIGURATION		(REPLAC	ES IV-23176)
THIS TES	7 🗍 DO	ES X	DOES NOT CONTAIN HAZARDO	IS OPERATIONS.		-
F	PLATFORM	REQUIREME	CT PNEUMATIC LINE TO PL NTS. CONNECT THE TEST RFORM COOLANT SYSTEM CC	CONSOLE CABLES	AND INTERCONN	ECTING
	UNDER NO	DRMAL CONDI	TIONS, THE COVER WILL N	OT DE DEMONED	e jakonan jiji n	
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		PLY TO PLAT	FORM WITHIN PROPER PURI RED FOR RECEIVING THE ST	TY SPECIFICATI	ONS. LABORATO	
C	CLEANED	PLY TO PLAT	FORM WITHIN PROPER PURI RED FOR RECEIVING THE ST	TY SPECIFICATI	ONS. LABORATO	
C	CLEANED	PLY TO PLAT AND PREPAR	FORM WITHIN PROPER PURI RED FOR RECEIVING THE ST	TY SPECIFICATI	ONS. LABORATO LED PLATFORM SY	STEM.
C	CLEANED	PLY TO PLAT AND PREPAR	FORM WITHIN PROPER PURI RED FOR RECEIVING THE ST	TY SPECIFICATI	ONS. LABORATO	STEM.
C	CLEANED	PLY TO PLAT AND PREPAR	FORM WITHIN PROPER PURI RED FOR RECEIVING THE ST	TY SPECIFICATI	ONS. LABORATO LED PLATFORM SY TEST REQUIREME	STEM.
C	CLEANED	PLY TO PLAT AND PREPAR	FORM WITHIN PROPER PURI RED FOR RECEIVING THE ST	TY SPECIFICATI	ONS. LABORATO LED PLATFORM SY	STEM.
C	CLEANED	PLY TO PLAT AND PREPAR	FORM WITHIN PROPER PURI RED FOR RECEIVING THE ST	TY SPECIFICATI	ONS. LABORATO LED PLATFORM SY TEST REQUIREME	STEM.
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C	CLEANED	PLY TO PLAT AND PREPAR	FORM WITHIN PROPER PURI RED FOR RECEIVING THE ST	TY SPECIFICATI	ONS. LABORATO LED PLATFORM SY TEST REQUIREME	STEM.
C	CLEANED	PLY TO PLAT AND PREPAR	FORM WITHIN PROPER PURI RED FOR RECEIVING THE ST	TY SPECIFICATI	ONS. LABORATO LED PLATFORM SY TEST REQUIREME	STEM.
	CLEANED	PLY TO PLAT AND PREPAR	FORM WITHIN PROPER PURI RED FOR RECEIVING THE ST	TY SPECIFICATI	ONS. LABORATO LED PLATFORM SY TEST REQUIREME MSFC: N/A	STEM.
C C	CLEANED	PLY TO PLAT AND PREPAR RATION: N/	FORM WITHIN PROPER PURI RED FOR RECEIVING THE ST	TY SPECIFICATI	ONS. LABORATO LED PLATFORM SY TEST REQUIREME	STEM.
C C	CLEANED	PLY TO PLAT AND PREPAR RATION: N/	FORM WITHIN PROPER PURI	TY SPECIFICATI	CONS. LABORATO LED PLATFORM SY TEST REQUIREME MSFC: N/A	STEM.
C C	CLEANED	PLY TO PLAT AND PREPAR RATION: N/	REASON B. ORGANIZATION IBM — 960	TY SPECIFICATI	CONS. LABORATO LED PLATFORM SY TEST REQUIREME MSFC: N/A	STEM.
REV.	CLEANED	PLY TO PLAT AND PREPAR RATION: N/	REASON B. ORGANIZATION	TY SPECIFICATI	CONS. LABORATO LED PLATFORM SY TEST REQUIREME MSFC: N/A	STEM.
REV.	CLEANED	PLY TO PLAT AND PREPAR RATION: N/	REASON B. ORGANIZATION IBM — 960	TY SPECIFICATI	CONS. LABORATO LED PLATFORM SY TEST REQUIREME MSFC: N/A	STEM.

APOLLO/SA	TURN TEST AND OPERATIONS CATA	LOG (SHEET 2)	PAGE 2 OF 2
	BILIZED PLATFORM SYSTEM PREL ORY TESTING (STANDBY)	IMINARY OPERATIONS	2. KSC TEST HUMBER V-23224 3. EFFECTIVITY
13. LOCATION	14. COMPUTER PROC. INDENTIFICATION		AS REQUIRED
LAB-VAB-1M6	N/A		4 MEN - 4.0 HOURS
16. SUPPORT REQUIREMEN			
INTERSTAGE:	NONE		1100
OFF COMPLEX	: NONE		
ON COMPLEX:	Q.I.		
17. OTHER APPLICABLE	REFERENCE DOCUMENTATION		ereganis de 1904 por four en sel de construir en la fina de la fina
NONE			
18. ITEM CONTINUATION			SERVICE SERVICE SERVICE OF AN EXPLOSION OF AN

KSC OPERATIONS	the state of the s
APOLLO SATURN TEST AND OPERATIONS CATALOG SHEET	PAGE 1 OF 2
7657.747.48	2. KSC TEST NUMBER
LASORATORY PNEUMATIC TEST OF THE ST-124M STABILIZED	V-23225
PLATFORM SYSTEM (STANDBY)	
EST OB FOTIVES	AS REQUIRED
A. TO VERIFY THAT THE STABILIZED PLATFORM PNEUMATIC PERFORM SPECIFIED FLOW AND PRESSURE TOLERANCES DURING SIMULATED TO CALIBRATE THE INTERNAL AMBIENT PRESSURE TRANSDUCER. TO DETERMINE PLATFORM; PEA, ASC, AND AC POWER SUPPLY LEAD TO VERIFY THAT THE PLATFORM PURGE SYSTEM PERFORMANCE IS FLOW AND PRESSURE TOLERANCES.	FLIGHT CONDITIONS. K RATE.
	•
CELCA PTICH EQUIPMENT STATUS CONFIGURATION	(REPLACES IV-2317
THIS TEST DOES X'DOES NOT CONTAIN HAZARDOUS OPERATIONS.	
TO MAINTAIN A PRESCRIBED DIFFERENTIAL PRESSURE WITH REFE AMBIENT PRESSURE. APPLY A VACUUM AT THE ORIFICE TO SIMU PRESSURE CONDITIONS AFTER LIFTOFF. RECORD INLET, INTERN	
ENFIAL, AND EXTERNAL AMBIENT PRESSURE VALUES, AND FLOW I	
E:FIAL, AND EXTERNAL AMBIENT PRESSURE VALUES, AND FLOW I	N S.L./MIN.
EXPIAL, AND EXTERNAL AMBIENT PRESSURE VALUES, AND FLOW I ADJUST THE INTERNAL AMBIENT PRESSURE AND CHECK THE INTER TRANSDUCER THROUGHOUT ITS OPERATING RANGE.	N S.L./MIN. NAL AMBIENT PRESSURE
EXPIAL, AND EXTERNAL AMBIENT PRESSURE VALUES, AND FLOW I ADJUST THE INTERNAL AMBIENT PRESSURE AND CHECK THE INTER TRANSCUCER THROUGHOUT ITS OPERATING RANGE. PRESSURIZE PLATFORM AND ASSOCIATED EQUIPMENT, AND CHECK D. ADJUST THE PURGE ORIFICE INLET PRESSURE WITHIN A SPECIFI INTERNAL AMBIENT PRESSURE AND PURGE ORIFICE FLOW RATE FA	N S.L./MIN. NAL AMBIENT PRESSURE FOR LEAKS. ED RANGE UNTIL THE
EXPIAL, AND EXTERNAL AMBIENT PRESSURE VALUES, AND FLOW I ADJUST THE INTERNAL AMBIENT PRESSURE AND CHECK THE INTER TRANSDUCER THROUGHOUT ITS OPERATING RANGE. PRESSURIZE PLATFORM AND ASSOCIATED EQUIPMENT, AND CHECK D. ADJUST THE PURGE ORIFICE INLET PRESSURE WITHIN A SPECIFI	N S.L./MIN. NAL AMBIENT PRESSURE FOR LEAKS. ED RANGE UNTIL THE LL WITHIN PRESCRIBED
EXPIAL, AND EXTERNAL AMBIENT PRESSURE VALUES, AND FLOW I ADJUST THE INTERNAL AMBIENT PRESSURE AND CHECK THE INTER TRANSCUCER THROUGHOUT ITS OPERATING RANGE. PRESSURIZE PLATFORM AND ASSOCIATED EQUIPMENT, AND CHECK ADJUST THE PURGE ORIFICE INLET PRESSURE WITHIN A SPECIFI INTERNAL ANDIENT PRESSURE AND PURGE ORIFICE FLOW RATE FA LIMITS. RECORD VALUES. ELECTRICAL, PHEUMATIC AND COOLING GSE CONNECTED. NO SUF CONFIGURATION: N/A	N S.L./MIN. NAL AMBIENT PRESSURE FOR LEAKS. ED RANGE UNTIL THE LL WITHIN PRESCRIBED PORT REQUIRED.
EXPIAL, AND EXTERNAL AMBIENT PRESSURE VALUES, AND FLOW I ADJUST THE INTERNAL AMBIENT PRESSURE AND CHECK THE INTER TRANSDUCER THROUGHOUT ITS OPERATING RANGE. PRESSURIZE PLATFORM AND ASSOCIATED EQUIPMENT, AND CHECK ADJUST THE PURGE ORIFICE INLET PRESSURE WITHIN A SPECIFI INTERNAL ANDIENT PRESSURE AND PURGE ORIFICE FLOW RATE FA LIMITS. RECORD VALUES. ELECTRICAL, PINEUMATIC AND COOLING GSE CONNECTED. NO SUF CONFIGURATION: N/A	N S.L./MIN. NAL AMBIENT PRESSURE FOR LEAKS. ED RANGE UNTIL THE LL WITHIN PRESCRIBED
ENFIAL, AND EXTERNAL AMBIENT PRESSURE VALUES, AND FLOW I E. ADJUST THE INTERNAL AMBIENT PRESSURE AND CHECK THE INTER TRANSDUCER THROUGHOUT ITS OPERATING RANGE. C. PRESSURIZE PLATFORM AND ASSOCIATED EQUIPMENT, AND CHECK D. ADJUST THE PURGE ORIFICE INLET PRESSURE WITHIN A SPECIFI INTERNAL AMBIENT PRESSURE AND PURGE ORIFICE FLOW RATE FA LIMITS. RECORD VALUES. ELECTRICAL, PHEUMATIC AND COOLING GSE CONNECTED. NO SUR CONFIGURATION: N/A	N S.L./MIN. NAL AMBIENT PRESSURE FOR LEAKS. ED RANGE UNTIL THE LL WITHIN PRESCRIBED PORT REQUIRED.

5/7/74 REVISE TEST AND SUPPORT REQUIREMENTS

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Contractor Approval KSC Approval

9. DATE

4/30/7/
12. APPROVAL DATE

LABORATORY PNEUMATIC TESTS OF THE ST-124M STABILIZED PLATFORM SYSTEM (STANDBY) 13. LOCATION LAV-VAB-IM6 N/A 14. COMPUTER PROC. INSENTIFICATION 15. SET TEST TOL 16. NEN - 24.0 HOURS INTERSTAGE: NONE OFF-COMPLEX: NONE ON-COMPLEX: Q.A. 17. OTHER APPLICABLE REFERENCE DOCUMENTATION ST-124M STABILIZED PLATFORM SYSTEM PRELIMINARY OPERATIONS FOR LAB TESTING. 18. ITEM CONTINUATION	APOLLO SA	ATURN TEST AND OF	PERATIONS CATALO	G (SHEET 2)		FATE 2	of2
INTERSTAGE: NONE OFF-COMPLEX: NONE ON-COMPLEX: Q.A. 17. OTHER APPLICABLE REFERENCE DOCUMENTATION ST-124M STABILIZED PLATFORM SYSTEM PRELIMINARY OPERATIONS FOR LAB TESTING.	LABORATORY	PNEUMATIC TESTS				V-23225 AS-REQUIRE	D D
INTERSTAGE: NONE OFF-COMPLEX: NONE ON-COMPLEX: Q.A. 17. OTHER APPLICABLE REFERENCE DOCUMENTATION ST-124M STABILIZED PLATFORM SYSTEM PRELIMINARY OPERATIONS FOR LAB TESTING. 18. ITEM CONTINUATION			INCENTIFICATION				
INTERSTAGE: NONE OFF-COMPLEX: NONE ON-COMPLEX: Q.A. 17. OTHER APPLICABLE REFERENCE DOCUMENTATION ST-124M STABILIZED PLATFORM SYSTEM PRELIMINARY OPERATIONS FOR LAB TESTING.						4 MEN - 24	1.0 TOOKS
OFF-COMPLEX: NONE ON-COMPLEX: Q.A. 17. OTHER APPLICABLE REFERENCE DOCUMENTATION ST-124M STABILIZED PLATFORM SYSTEM PRELIMINARY OPERATIONS FOR LAB TESTING. 18. ITEM CONTINUATION							
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ST-124M STABILIZED PLATFORM SYSTEM PRELIMINARY OPERATIONS FOR LAB TESTING. 18. ITEM CONTINUATION	OFF-COMPLE	X: NONE			•		
ST-124M STABILIZED PLATFORM SYSTEM PRELIMINARY OPERATIONS FOR LAB TESTING. 16. IYEM CONTINUATION	ON-COMPLEX	: Q.A.				•	
ST-124M STABILIZED PLATFORM SYSTEM PRELIMINARY OPERATIONS FOR LAB TESTING.							
ST-124M STABILIZED PLATFORM SYSTEM PRELIMINARY OPERATIONS FOR LAB TESTING.	•						
ST-124M STABILIZED PLATFORM SYSTEM PRELIMINARY OPERATIONS FOR LAB TESTING. 16. IYEM CONTINUATION							
ST-124H STABILIZED PLATFORM SYSTEM PRELIMINARY OPERATIONS FOR LAB TESTING.							*
ST-124M STABILIZED PLATFORM SYSTEM PRELIMINARY OPERATIONS FOR LAB TESTING. 16. IYEM CONTINUATION							
18. ITEM CONTINUATION 19. ITEM CONTINUATION	17. OTHER APPLICABLE	REFERENCE DOCUMEN	TATION M CYCTEM PREI II	MINARY OPERA	TIONS FO	R LAB TESTIN	VG.
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KSC OPERATIONS APOLLO SATURN TEST AND OPERATIONS CATALOG SHEET	PAGE _1_ OF _2
FUNCTIONAL TEST OF THE ST-124M STABILIZED PLATFORM	2. KSC TEST NUMBER V-23226
SYSTEM IN THE LABORATORY (STANDBY)	AS REQUIRED
TO APPLY POWER TO THE STABILIZED PLATFORM SYSTEM AND VE FUNCTIONAL PERFORMANCE.	
en general de la companya de la comp	
	• • •
EST SEAGR PTION EQUIPMENT STATUS/CONFIGURATION	(REPLACES IV-23179)
THIS TEST DOES X DOES NOT CONTAIN HAZARDOUS OPERATIONS.	CALL MACCO 14-151132
SYSTEM. CBSERVE ALL METERS AND RECORDERS FOR NORMAL IN THAT EACH SWITCH OPERATION PERFORMS ITS FUNCTION SATISF PLATFORM SYSTEM PREPARATION FOR LABORATORY TEST COMPLET	ACTORILY.
configuration: N/A	and the second second
· 中的原则是一种的一种的原则的人物的现在分词,但是不是一种。	TEST REQUIREMENTS .
 A Martin Community of the C	MSFC: 7921601 0.3.1.1.2.2 THRU 0.3.1.1.2.2.3
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	Control Marian (1994) Control Marian (1994)
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PEV. CATE REASON CONTRACTOR APPROVAL B. ORGANIZATION 9.	Contractor Approval KSC Approval

	N TEST AND OPERATIONS CATALOG (SHEET 2)		PAGE2	
FUNCTIONAL TES IN THE LABORAT	ST THE ST-124M STABILIZED PLATFORM SYST TORY (STANDBY)	EM .	V-23226 S. EFFECTIVITY AS REQUIR	ED
AB-VAB-1M6	COMPUTER PROC. INDENTIFICATION N/A		15 EST. TEST T	
SUPPORT REQUIREMENTS				
INTERSTAGE:	NONE			
	NONE	• • •		
OFF-COMPLEX:	NONE		16	
ON-COMPLEX:	Q.A.			
	ERENCE DOCUMENTATION			
••	ERENCE DOCUMENTATION			
NONE	and the first of the second			
ITEM CONTINUATION				
ITEM CONTINUATION				. •
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KSC OPERATIONS APOLLO/SATURN TEST AND OPERATIONS CATALOG SHEET	PAGE 1 OF 3
CAT TITLE	2. KEC TEST NUMBER
ALIDATION PROCEDURE - ST-124M MOUNTING SURFACE	V-23227
LIGNMENT TEST FIXTURE (STANDBY)	3. EFFECTIVITY
EST OBJECTIVES	AS REQUIRED
TO VERIFY THAT THE GEOMETRIC CONFIGURATION OF THE ST- ALIGNMENT TEST FIXTURE IS WITHIN GIVEN TOLERANCES AS	
EST DESCRIPTION/EQUIPMENT STATUS/CONFIGURATION THIS TEST DOES X DOES NOT CONTAIN HAZARDOUS OPERATIONS.	(REPLACES IV-2318
VERIFY THAT THE FIXTURE IS VERTICAL WHEN ON VERTICAL I	MOINTE VEDIEV THAT
THE PRISM IS AT A CORRECT AZIMUTH ANGLE WITH RESPECT	
THE PRISM IS AT A CORRECT AZIMUTH ANGLE WITH RESPECT	
THE PRISM IS AT A CORRECT AZIMUTH ANGLE WITH RESPECT	TO ITS MOUNTING SURFACES.
THE PRISM IS AT A CORRECT AZIMUTH ANGLE WITH RESPECT LABORATORY CHECKOUT TURN-TILT STAND SHOULD BE VALIDATED WITHIN 30 DAYS PR THIS PROCEDURE.	TO ITS MOUNTING SURFACES.
THE PRISM IS AT A CORRECT AZIMUTH ANGLE WITH RESPECT LABORATORY CHECKOUT TURN-TILT STAND SHOULD BE VALIDATED WITHIN 30 DAYS PR	TO ITS MOUNTING SURFACES.
THE PRISM IS AT A CORRECT AZIMUTH ANGLE WITH RESPECT LABORATORY CHECKOUT TURN-TILT STAND SHOULD BE VALIDATED WITHIN 30 DAYS PR THIS PROCEDURE.	TO ITS MOUNTING SURFACES.
THE PRISM IS AT A CORRECT AZIMUTH ANGLE WITH RESPECT LABORATORY CHECKOUT TURN-TILT STAND SHOULD BE VALIDATED WITHIN 30 DAYS PR THIS PROCEDURE.	TO ITS MOUNTING SURFACES.
THE PRISM IS AT A CORRECT AZIMUTH ANGLE WITH RESPECT LABORATORY CHECKOUT TURN-TILIT STAND SHOULD BE VALIDATED WITHIN 30 DAYS PR THIS PROCEDURE. CONFIGURATION: N/A	TO ITS MOUNTING SURFACES.
THE PRISM IS AT A CORRECT AZIMUTH ANGLE WITH RESPECT LABORATORY CHECKOUT TURN-TILIT STAND SHOULD BE VALIDATED WITHIN 30 DAYS PR THIS PROCEDURE. CONFIGURATION: N/A	TO ITS MOUNTING SURFACES. IOR TO PERFORMING TEST REQUIREMENTS
THE PRISM IS AT A CORRECT AZIMUTH ANGLE WITH RESPECT LABORATORY CHECKOUT TURN-TILIT STAND SHOULD BE VALIDATED WITHIN 30 DAYS PR THIS PROCEDURE. CONFIGURATION: N/A	TO ITS MOUNTING SURFACES.
THE PRISM IS AT A CORRECT AZIMUTH ANGLE WITH RESPECT LABORATORY CHECKOUT TURN-TILIT STAND SHOULD BE VALIDATED WITHIN 30 DAYS PR THIS PROCEDURE. CONFIGURATION: N/A	TO ITS MOUNTING SURFACES. IOR TO PERFORMING TEST REQUIREMENTS
THE PRISM IS AT A CORRECT AZIMUTH ANGLE WITH RESPECT LABORATORY CHECKOUT TURN-TILIT STAND SHOULD BE VALIDATED WITHIN 30 DAYS PR THIS PROCEDURE. CONFIGURATION: N/A	TO ITS MOUNTING SURFACES. IOR TO PERFORMING TEST REQUIREMENTS
THE PRISM IS AT A CORRECT AZIMUTH ANGLE WITH RESPECT LABORATORY CHECKOUT TURN-TILIT STAND SHOULD BE VALIDATED WITHIN 30 DAYS PR THIS PROCEDURE. CONFIGURATION: N/A	TO ITS MOUNTING SURFACES. IOR TO PERFORMING TEST REQUIREMENTS
THE PRISM IS AT A CORRECT AZIMUTH ANGLE WITH RESPECT LABORATORY CHECKOUT TURN-TILIT STAND SHOULD BE VALIDATED WITHIN 30 DAYS PR THIS PROCEDURE. CONFIGURATION: N/A	TO ITS MOUNTING SURFACES. IOR TO PERFORMING TEST REQUIREMENTS
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THE PRISM IS AT A CORRECT AZIMUTH ANGLE WITH RESPECT LABORATORY CHECKOUT TURN-TILIT STAND SHOULD BE VALIDATED WITHIN 30 DAYS PR THIS PROCEDURE. CONFIGURATION: N/A	TO ITS MOUNTING SURFACES. IOR TO PERFORMING TEST REQUIREMENTS

APOLLO/S	PAGE 2 OF 2	
VALIDATION PROCEDURE - ST-124M MOUNTING SURFACE ALIGNMENT TEST FIXTURE (STANDBY)		Z. KSC TEST NUMBER V-23227 S. EFFECTIVITY
		AS REQUIRED
. LOCATION	14. COMPUTER PROC. INDENTIFICATION	IS. EST. TEST TIME
LAB-VAB-1M6	N/A	3 MEN - 2.5 HOURS
INTERSTAGE	NONE	
OFF COMPLE	EX: NONE	
. ON COMPLEX	c: 0.1.	
. 0.1 00.1 00.		
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B. ITEM CONTINUATION		
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6. REV. DATE REASON Contractor Approval KSC Approval
7. CONTRACTOR APPROVAL
B. ORGANIZATION
9. DATE

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12. APPROVAL DATE

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KSC OPERATIONS APOLLO SATURN TEST AND OPERATIONS CATALOG SHEET	PAGE
THE THE STREET STREET STREET STREET	V-23259
READINESS CHECKS OF S-IB FLIGHT CONTROL TEST EQUIPMENT	206 & Subs

TEST OBJECTIVES

TO VERIFY THAT THE S-IB FLIGHT CONTROL TEST EQUIPMENT IS READY TO SUPPORT LABORATORY AND/OR S-IB STAGE FLIGHT CONTROL SYSTEM CHECKOUT.

S THE SESSEN PETION EQUIPMENT STATUS/CONFIGURATION

THIS TEST __ DOES TO DOES NOT CONTAIN HAZARDOUS OPERATIONS.

- 1. Readiness checks will be performed on the following S-IB Flight Control Equipment:
 - a. S-IB Interrupt Boxes
 - b. S-IB Actuator Calibration and Measuring Fixture
 - c. S-IB Portable Substitute Computers
 - d. S-IB Hydraulic Servicer
 - e. S-IB Actuator Test Boxes
- f. S-IB Actuator Dummy Loads
 Tests will be conducted per each vehicle in the Flight Control Laboratory prior to S-IB Flight Control System checkout.

CONFIGURATION: LABORATORY TESTS.

TEST REQUIREMENTS: MSFC - N/A

E '4-23-73 To delineate	checkout of addition	nal equip. Too	From 21. 84 2
A 6-19-72 To comply w			ou DW CV
CATE DATE	REASON	Contractor	Approval KSC Apploval
D. Stewart/W. O. Brown	8. ORGANIZATION CCSD	9. DATE 16-11.	71
	11. ORGANIZATION LV- GDC - 33	12. APPROVAL	

APOLLO/SATURN TEST AND OPERATIONS CATALOG (SHEET 2)	PAGE 2 OF 2		
TEST TITLE	V-23259		
READINESS CHECKS OF S-IB FLIGHT CONTROL	V-23259		
TEST EQUIPMENT	206 & Subs		
LOCATION 14. COMPUTER PROC. INDENTIFICATION	16. EST. TEST TIME		
F. C. Lab VAB N/A	8.0 Hours		
S SUPPORT REQUIREMENTS			
NONE	*		
OTHER APPLICABLE REFERENCE DOCUMENTATION			
NONE			
S. ITEM CONTINUATION	A STATE OF THE STA		
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The state of the s			

VISUAL INSPECTION AND FUNCTIONAL TEST OF SPARE S-IB HYDRAULIC ACTUATORS IN LABORATORY

KSC OPERATIONS
CATALOG SHEET

PAGE 1 OF 2

V=2 Test Number V-23260

SEPERATIVITY 206 § SUBS

4 TEST DBJECTIVES

TO VISUALLY INSPECT AND FUNCTIONALLY TEST THE SPARE S-IB HYDRAULIC ACTUATOR IN THE FLIGHT CONTROL LAB TO VERIFY THAT NO DAMAGE HAD OCCURRED DURING SHIPMENT.

S TEST DESCRIPTION EQUIPMENT STATUS CONFIGURATION

THIS TEST __ DOES ___ DOES NOT CONTAIN HAZARDOUS OPERATIONS.

The Actuator will be visually inspected for physical damage, serial numbers shall be recorded.

Resistance, electrical noise, and electro-mechanical alignment tests will be conducted utilizing the S-IB actuator test box assembly and the actuator calibration and measuring fixture.

CONFIGURATION: LABORATORY TEST

TEST REQUIREMENTS:

A 6 4.74	PEVISE EFFECT	IVITY		- Thrown	Aw Ely
6. PEY. A DATE	13	REASON		Contractor Approval	KSC Approval
D. Oberlin/W.	O. Brown	e. ORGANIZATION CCSD	11.	10-4-71	
Heory 1	-0	11. ORGANIZATION LV- GDC -33	12	10 / 20 /71	

APOLLO SA	TURN TEST AND OPERATIONS CATALOG (SHEET 2)	PASE 2 05 2	
TEST TITLE		V-23260	
VISUAL INSPECTION AND FUNCTIONAL TEST OF SPARE S-IB HYDRAULIC ACTUATORS IN LABORATORY		S EFFECTIVETY	
		206 & SUBS	
LOCATION	18 COMPUTER PROC. INDENTIFICATION	3.0 Hours	
C Lab - VAB	N/A	3.0 Hours	
NONE			
17. OTHER APPLICABLE	REFERENCE DOCUMENTATION		
	REFERENCE DOCUMENTATION		
NONE	REFERENCE DOCUMENTATION		
NONE			
NONE			

5 TEST DESCRIPTION

KSC OPERATIONS
APOLLO SATURN TEST AND OPERATIONS CATALOG SHEET

S-IB HYDRAULIC ACTUATOR POTENTIOMETER
LAB INSPECTION AND CHECKOUT

1257 OBJECTIVES

1257 OBJECTIVES

TO VISUALLY INSPECT AND FUNCTIONALLY TEST THE SPARE S-IB HYDRAULIC ACTUATOR POTENTIOMETER.

TITTESCH PTION EQUIPMENT STATUS CONFIGURATION

THIS TEST DOES TO DOES NOT CONTAIN HAZARDOUS OPERATIONS.

- The potentiometer will be visually inspected for damage and serial numbers will be recorded.
- Resistance, electro-mechanical alignment, and potentiometer electrical noise tests will be conducted.
- The S-IB actuator test box and the actuator calibration and measuring fixture will be used in this test.

CONFIGURATION: LABORATORY TEST.

TEST REQUIREMENTS:
MSFC - LVTOM1-548-67-CCSD-147

FENTSE EFFECT	IVITY	TITTOTEN AN. Chy
1 2-20-73 Potentiom	eter mating with extension	on Contraction
SEV DATE	REASON	Contractor Approval KSC Approval
TOP APPROVAL	8 OFGANIZATION	9. DATE
D. Part of W. O. Brown	CCSD	10-4-71
. NASA P. CAPPERS IA.	11. ORGANIZATION	12. APPROVAL DATE
George W. Ely	LV-GDC-33	10/20/71

PAGE 2 05 2 APOLLO SATURN TEST AND OPERATIONS CATALOG (SHEET 2) 2 450 *(5* 4. MB&4 1 TEST TITLE V-23261 S-IB HYDRAULIC ACTUATOR POTENTIOMETER LAB INSPECTION AND CHECKOUT ** *** *** ** 206 & SUBS IS EST TEST YIME 14 COMPUTER PROC. INDENTIFICATION 2 Hours FC LAB, VAB N/A IN SUPPORT REQUIREMENTS NONE 7 OTHER APPLICABLE REFERENCE DOCUMENTATION NONE 18 ITEM CONTINUATION

->

PAGE _1 _ OF _ 2 KSC OPERATIONS
APOLLO SATURN TEST AND OPERATIONS CATALOG SHEET V-23262 EFFECTIVITY S-IB FLIGHT CONTROL POST ERECTION OPERATIONS 206 & SUBS TEST TALESTIVES TO VERIFY NO SHIPPING ANOMALIES AND TO INSTALL PROTECTIVE NON-FLIGHT HARDWARE. 11 TELT SES. - PTION EQUIPMENT STATUS CONFIGURATION X DOES NOT CONTAIN HAZARDOUS OPERATIONS. THIS TEST DOES 1. A visual inspection is made of all hydraulic actuator assemblies in order to uncover any shipping anomalies. 2. Actuator protective cable guards are installed on all eight S-IB actuators. 3. Actuator position indicator scales are installed on all eight S-IB actuators. 4. All non-flight hardware will be identified. CONFIGURATION: N/A TEST REQUIREMENTS: MSFC - N/A It w Elg CITATION (4-74 MAYINE EFFECTIVITY Contractor Approval KSE Approval SPEY. DATE : REASON D. Stewart W. O. Brown EAB & ORGANIZATION 10-4-71 CCSD

11. ORGANIZATION

LV-GDC-33

12. APPROVAL DATE

10/20/71

APOLLO SATURN TEST AND OPERATIONS CATALOG (SHEET 2)	PAGE 2 OF 2
TEST TITLE	V-23262
S-IB FLIGHT CONTROL POST ERECTION OPERATIONS) FFFCCT.V.T.
LOCATION 14 COMPLETE PROC INDENTIFICATION	206 & SIES
VAB - HR #1 N/A	2.0 Hours
NONE	
7 OTHER APPLICABLE REFERENCE DOCUMENTATION	
OTHER AFFERRAGE REFERENCE DOCUMENTATION	
NONE	
8 ITEM CONTINUATION	
Carlo	
	A CONTRACTOR OF THE REAL PROPERTY AND ADDRESS OF THE PROPERTY A

KSC OPERATIONS
APOLLO SATURN TEST AND OPERATIONS CATALOG SHEET PAGE 1 OF 2 V-23263 INSTALLATION AND REMOVAL OF S-IB EFFECTIVITY ACTUATOR HOLDING FIXTURES 206 & SUBS "ES" DEVESTIVES

TO PROVIDE FOR DISCONNECTION AND RECONNECTION OF THE S-IB HYDRAULIC ACTUATORS FROM THE THRUST STRUCTURE.

STECT DESCRIPTION EQUIPMENT STATUS CONFIGURATION

THIS TEST DOES X DOES NOT CONTAIN HAZARDOUS OPERATIONS.

- 1. Holding fixtures are installed on all eight (8) S-IB Hydraulic Actuators to provide support and clearance between the actuators and nearby vehicle components.
- 2. Identify holding fixtures as non-flight hardware.
- 3. Holding fixtures are removed and the actuators are reconnected to the vehicle airframe.

CONFIGURATION:

TEST REQUIREMENTS: MSFC - N/A

. . .

C 4.94 PEVISE LEFECTIVITY Contractor Approval KSC Approval DATE REASON Den Daiden Cattorau /0 - 4 - 7, 12. APPROVAL DATE D. Daddow W. O. Brown CCSD 15 NASA-KSC APPROVAL APDIG-20-71 11. ORGANIZATION LV- GDC- 33

PACE 2 OF 2 APOLLO SATURN TEST AND OPERATIONS CATALOG (SHEET 2) V-23263 INSTALLATION AND REMOVAL OF S-IB A EFFECTIVITY ACTUATOR HOLDING FIXTURES 206 % SUBS 12 EST. "EST TIME LC-39 N/A 2.0 Hours 16 SUPPORT REQUIREMENTS S-IB Vehicle Mechanical 17 OTHER APPLICABLE REFERENCE DOCUMENTATION NONE 18 ITEM CONTINUATION

KSC OPERATIONS APOLLO SATURN TEST AND OPERATIONS CATALOG SHEET	PAGE1OF2
	V-23264
S-IB HYDRAULIC ACTUATOR VISUAL INSPECTION AND ELECTRO-MECHANICAL STATIC TEST	206 & SUBS

TO PERFORM A VISUAL INSPECTION AND FUNCTIONAL TEST ON EACH OF THE EIGHT (8) HYDRAULIC ACTUATORS ON THE S-IB STAGE.

A TEST TES BOT ON EQUEMENT STATUS CONFIGURATION

THE TEST DOES "X DOES NOT CONTAIN HAZARDOUS OPERATIONS.

- The actuators must be mechanically disconnected from the thrust frame for this test.
- A complete visual inspection will be conducted on all eight (8) hydraulic actuator assemblies and all significant data (Ser. No., Cure Date, etc.) recorded.
- 3. An electro-mechanical alignment, a resistance test on both potentiometers and servo valve, and a potentiometer electrical noise test is then conducted utilizing the S-IB actuator test box.

CONFIGURATION: Vehicle in vertical position.

TEST REQUIREMENTS: MSFC - 3.1.2.1

3. 1. 2. 3

3.1.2.5

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DE. CATE	REASON	Contractor Approval KSC Approval
A. Petro W. O. Brown	CCSD	10-4-7P
Heory W. Ely	11 ORGANIZATION LV- GDC-13	12. APPROVAL DATE 10/20/71

APOLLO SATURN TEST AND OPERATIONS CATALOG (SHEET 2)	PAGE _2 OF _2
S-IB HYDRAULIC ACTUATOR VISUAL INSPECTION AND ELECTRO-MECHANICAL STATIC TEST	V-23264 > PPPECTIVEY 206 & SUBS 15 EST, TEST TIME
H. B. #1, VAB N/A	8.0 Hours
VEHICLE MECHANICAL (AS REQUIRED)	
7 OTHER APPLICABLE REFERENCE DOCUMENTATION	
NONE	
S of state are property	
	T II Panks

KSC OPERATIONS PAGE _1_ OF _2 APOLLO SATURN TEST AND OPERATIONS CATALOG SHEET V-23265 1. TEST TITLE FUNCTIONAL TEST AND CALIBRATION OF S-IB LCC S. EFFECTIVITY FLIGHT CONTROL SUPPORT EQUIPMENT As Required 4 TEST OBJECTIVES TO VERIFY THE TEST READINESS OF LCC ELECTRICAL SUPPORT EQUIPMENT NECESSARY FOR FLIGHT CONTROL SYSTEMS CHECKOUT AND LAUNCH. TEST DESCRIPTION EQUIPMENT STATUS CONFIGURATION X DOES NOT CONTAIN HAZARDOUS OPERATIONS. THIS TEST DOES The following panels are functionally tested and/or calibrated, using vehicle or DDAS substitute signal. S-IB engine deflection panel S-IB Hydraulic Control & Monitor Panel LCC Actuator Delta I & Position Recorders Flight Control Display & Control Console 2. This test normally will be accomplished prior to operations testing of vehicle flight control systems. CONFIGURATION: LCC DDAS must be operational. TEST REQUIREMENTS: MSFC - N/A 6-19-72 To comply with TI-2-17, Rev. F REASON Contractor Approval

E48 8 ORGANIZATION

CCSD 11. ORGANIZATION

LV- GDC-33

10/20/11

D. Stewart/W.O. Brown

APOLLO SATURN TE	T AND OPERATIONS CATALOG (SHEET 2)		PAGE _2_ OF _2_	
TEST TITLE		CP-CATAL ROSE FOR STREET	V-23265 3. EFFECTIVITY As Required	
FUNCTIONAL TEST : FLIGHT CONTROL S	AND CALIBRATION OF S-IB LCC UPPORT EQUIPMENT			
LCC - FR #3	TER PROC. INDENTIFICATION N/A		4.0 Hours	
 Ground Powe DDAS RCA-110A 				

NONE

	KSC OPERATIONS APOLLO SATURN TEST AND OPERATIONS CATALOG SHEET	PAGE _1OF _2
• • •		V-23266
	S-IB STAGE HYDRAULIC ACTUATOR SYSTEM FUNC- TIONAL TEST	206 & SUES
• 7	* +. + . * (+CS	

 To functionally test the complete S-IB hydraulic actuator system and its associated equipment.

2. To test the S-IB flight control system in normal flight configuration.

STEST TESTA PTION EQUIPMENT STATUS CONFIGURATION

THIS TEST DOES X DOES NOT CONTAIN HAZARDOUS OPERATIONS.

This test is conducted in two parts.

Part I - Single System Operation

Part II - All Systems - On Operation

Part I - Single System Operation

Each individual hydraulic system is activated, and visually inspected for leaks or erratic operation. The actuators are then cycled and nulled using the S-IB substitute computer.

Part II - All Systems Operation

All hydraulic systems are activated. The S-IB system nulls are read at ambient temp, and at approximately 150°F. The SIB actuators will be cycled at approximately 100°F.

Hydraulic systems are inspected for leaks and erratic operation.

A visual inspection is performed before, during, and after each of the above tests.

CONFIGURATION: Vehicle in vertical position after Power On.

TEST REQUIREMENTS MSFC - 3.1.1.2.2.] . 3.1.2.4 3.1.2.7

1 100	→ PENISE EFFECTI	YIIV		Colfrea.	Herry W. Ely
A 7-11	-73 To change Par	t II of Test Description		Withran	Leong W. Ely
6 SEV. DAT	Ε	REASON		Contractor Approval	KSC Approval
A. Petro	W. O. Brown	CCSD		10 4.71	
Heory	W. Ely	LV- GDC - 27	1	10 / 20/71	

APOLLO SATURN TEST AND OPERATIONS CATALOG (SHEET 2)	PAGE 2 OF 2	
TEST TITLE	V-23266	
S-IB STAGE HYDRAULIC ACTUATOR SYSTEM	3 EFFECT . **	
FUNCTIONAL TEST	206 5 5 55	
I. B. #1, VAB OAHF	4.0 Hours	
6 SUPPORT REQUIREMENTS		
S-IB Vehicle Mechanical S-IB Blockhouse Measuring I. U. Flight Control D. D. A. S. Blockhouse		
OTHER APPLICABLE REFERENCE DOCUMENTATION		
NONE		
NOINE 1 ITEM CONTINUATION		

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PAGE 1 OF 2 KSC OPERATIONS APOLLO SATURN TEST AND OPERATIONS CATALOG SHEET V-23267 S-IB HYDRAULIC ACTUATOR POSITION FFFECTIVITY MEASURING CALIBRATION 206 & SUBS

THE PART ES

To calibrate the S-IB engine deflection meters and the Flight Control Firing Room recorders.

To verify actuator measuring potentiometer calibration curves.

To obtain data point inputs for computer programs.

TO THE TEST A PT ON EQUIPMENT STATUS CONFIGURATION X DOES NOT CONTAIN HAZARDOUS OPERATIONS.

Move the S-IB Hydraulic Actuators to discrete positions and adjust the S-IB engine deflection meters and the Flight Control Firing Room recorders to indicate proper positions.

Verify with measuring that the measuring voltage associated with a particular position falls within the tolerance range of the actuator calibration curves.

The following procedures/tests must be completed prior to performing this task:

- 1. Functional Test and Calibration of S-IB Firing Room Flight Control Support Equipment.
- 2. S-IB Flight Control Pre-Operational and Securing Procedure.
- 3. S-IB Hydraulic Actuator Visual Inspection and Electro-Mechanical Static Test.

CONFIGURATION: Vehicle Vertical and Mated

TEST REQUIREMENTS:

A / / 94 PENTON EFFECT	IVIIY	Ely
A SEV. DATE	REASON	Contractor Approval KSC Approval
PROSTER STOR APPROVAL STORY	S ORGANIZATION	9:DATE:
D. Daddow/W.O. Brown	CCSD	// 5 - //
TO HASHIPSC APPROVAL DAS 16-24-7	11. ORGANIZATION	12. APPROVAL DATE
King W. Eig 10/21/2	LV- CDC-33	10/ 20/71

PAGE 2 OF 2 APOLLO SATURN TEST AND OPERATIONS CATALOG (SHEET 2) V-23267 S-IB HYDRAULIC ACTUATOR POSITION MEASURING CALIBRATION 206 & SUBS 8 EST TEST - ME 14 COMPUTER PROC INDENTIFICATION 12 Hours FR #3, HB-1 OAAC SOPPLET REQUIREMENTS GROUND POWER SATURN GROUND COMPUTER COMPLEX IU MEASURING IU DDAS 7 OTHER APPLICABLE REFERENCE DOCUMENTATION NONE 18 ITEM CONTINUATION

KSC OPERATIONS APOLLO SATURN TEST AND OPERATIONS CATALOG SHEET	PAGE _ 1_ OF _ 2_
10 · 14	V-23268
S-IB STAGE ACTUATOR POSITION CALIBRATION DATA LOAD	206 & SUBS

PROVIDE S-IB STAGE ACTUATOR POSITION CALIBRATION DATA FOR PROGRAMS CTB1, CTB6, and CTB7.

TETT DESCRIPTION EQUIPMENT STATUS CONFIGURATION

THE TEST DOES IN DOES NOT CONTAIN HAZARDOUS OPERATIONS.

- Load the magnetic tape with data from 80 card column cards which has the actuator positional information.
- 2. Verify that the correct identification is on the effective tape.
- Edit the calibration tape or 'key in' corrected calibration data when
 processing data from a single actuator or when correcting otherwise
 invalid data.
- 4. This operation will be performed off line.

CONFIGURATION: N/A

TEST REQUIREMENTS: MSFC: N/A

: 17/ 404 MANINE EFFECT	IVITY		Colpress	A. W. Ely
4 ST. DATE	REASON		Contractor Approval	KSC Approvo
	8. ORGANIZATION CCSD	9.	10.5-71	
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APOLLO SATURN TEST AND OPERATIONS CATALOG (SHEET 2)	PAGE 2 OF 2
TEST TITLE	V-23268
S-IB STAGE ACTUATOR POSITION CALIBRATION	V-23258
DATA LOAD	200 6 0000
LOCATION 14 COMPLTER PHOC INDENTIFICATION	206 5 5135
FR#3 & HB-1 CTB8	4.0 Hours
SUPPORT REQUIREMENTS	Carried Park Lines
	Maria de la compania
1. Saturn Ground Computer Complex	
1. Saturn Ground Compact Compact	
7. OTHER APPLICABLE REFERENCE DOCUMENTATION	
NONE	
NONE	
8. ITEM CONTINUATION	
THE REPORT OF THE PROPERTY OF THE PARTY OF T	
THE PERSON AND ACT SMITH INVESTIGATION OF THE SECOND STATES	
AN ANCIEMBRUT ACT TRIBUT DAY A GET ME SEGURE TO	
AN ANTICOPPORTUTI ACCUMULATION DAY A MEN AND SECURITION OF THE SECURITIES.	
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AE	KSC OPERATIONS APOLLO SATURN TEST AND OPERATIONS CATALOG SHEET	PACE 1 0F 2
	S-IB ACTUATOR DIFFERENTIAL PRESSURE FEED-	V-23269
	BACK AND ACTUATOR STICTION TEST	206 & SUBS

TO CONFIRM THE PROPER FUNCTIONING OF THE SERVO VALVES ON THE S-IB ACTUATORS.

LIT 175 H RTION EQUIPMENT STATUS CONFIGURATION

THIS TEST DOES X DOES NOT CONTAIN HAZARDOUS OPERATIONS.

- A step input equivalent to 1.5 degrees of actuator movement is applied to the actuator servo valves to verify proper operation of the differential pressure feedback (DPF) Loop.
- A Sinusoidal input of 0.1 Hz at ± 0.10 is applied to the actuator servo valves to verify proper operation of the servo valves and no contamination of the hydraulic fluid.
- 3. The input signals are provided by the S-IB substitute computer.
- 4. The actuator hydraulic system will provide power for actuator response.
- Actuator responses monitored on a portable recorder will be used for test evaluation.

CONFIGURATION: The actuators are mechanically connected in flight configuration.

TEST REQUIREMENTS: MSFC - 3.1.2.2

3, 1, 2, 6

REASON

Controctor Approval

KSC Approval

D. STOWART W. O. Brown

CCSD

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APOLLO SATURN TEST AND OPERATIONS CATALOG (SHEET 2)		PA	ε_2_ο	F_2_
S-IB ACTUATOR DIFFERENTIAL PRESSURE FI	EED-	1 Freec		
1 LECATION 14 COMPUTER PROC INDENTIFICATION		206	G SUES	
LC-39 OAGS	7"	4.0	Hours	
SUPPORT HEQUIREMENTS				
 RCA-110A S-JB Power LČC Measuring (LVO) DDAS S-IB Vehicle Mechanical 				
5. S-1B venicle Mechanical				
OTHER APPLICABLE REFERENCE DOCUMENTATION				<u></u>
* *				
NONE				
ITEM CONTINUATION				
사용 기술 사람이 있어요? 그렇게 되었다고요?				
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KSC OPERATIONS
APOLLO SATURN TEST AND OPERATIONS CATALOG SHEET

EST TITLE
S-IB STAGE HYDRAULIC SYSTEM OPERATION

STANDBY

AS Required

TEST OBJECTIVES

PROVIDE HYDRAULIC SYSTEM OPERATION UTILIZING THE S-IE SUBSTITUTE COMPUTER IN SUPPORT OF OTHER TEST OPERATIONS REQUIRING HYDRAULICS.

TEST DESCRIPTION EQUIPMENT STATUS CONFIGURATION

THIS TEST TO DOES | DOES NOT CONTAIN HAZARDOUS OPERATIONS.

- 1. Connect the S-IE Substitute Computer to an S-IB Hydraulic Actuator System.
- 2. Apply Hydraulic Pressure to the Actuator System.
- 3. Visually inspect the Hydraulic Actuator System for leaks or erratic operation.
- 4. Operate S-IB Hydraulic System as required.

CONFIGURATION: VEHICLE IN VERTICAL POSITION, POWER ON.

TEST REQUIREMENTS: MSFC - 3.1.1.1.17HROUGH - 3.1.1.1.4 3.1.2.7

C	13-28-73	Delete Item 5,	Block 5, & change BH Meas	to LCC Meas Alton	- JAN (21-
B	3-25-73	Change to Haz	ardous Opns. under certain	conditions (135	1 12 10 GEV 3 - 1
Α	1/23/73	TO REFLECT CON	MPLETE MSFC TEST REQUIREMENT	Tot Som	五川 はいい
FEV	DATE		REASON	Contractor Approval	KSC Aphrave
	TRACTOR APP		3. CRGANIZATION	9. DATE	
D. I	ンシュンン Daddow/W	O. Brown	CCSD	10-4-7	1
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APOLLO'SATURN TEST AND OPERATIONS CATALOS (SHEEY 2)

PAGE 12 OP 2

1. YEST TITLE

S-IB STAGE HYDRAULIC SYSTEM OPERATION

STANDBY

AS Required

1. Location
LCC 39

OAGS - General Support Program

1. 0 Hour

S-IB Vehicle Mechanical
LCC Measuring
DDAS
RCA-110A Ground Computer System
S-IB Ground Networks

17 OTHER APPLICABLE REFERENCE EDCLHENTATION

1. S-IB Flight Control Pre-Operational & Securing Proc.

2. Actuator, Thrust Vector Control, Specification for 10M01683.

8 ITEM CONTINUATION

MATING AND ALIGNMENT OF SIB STAGE TO LAUNCHER

MATING SATURATIONS CATALOG SHEET

MATING AND ALIGNMENT OF SIB STAGE TO LAUNCHER

MATING AND ALIGNMENT OF SIB STAGE TO LAUNCHER

MATING AND ALIGNMENT OF SIB STAGE TO LAUNCHER

MATING SATURATIONS

MATI

The objective of this operation is to set each of the eight launcher nose blocks to form an elevation pattern which will minimize loading differentials between the eight leg/strut members which support the stage on the launcher.

STATE CONFIGURATION EOUPMENT STATUS CONFIGURATION

THIS TEST DOES X DOES NOT CONTAIN HAZARDOUS OPERATIONS.

- I. After the stage has been erected, launcher nose block shall be adjusted as required to cause datum plane "A" reference points to fall in plane. The reference points are monitored optically when launcher adjustments are made. The elevation pattern of all points is verified to be within acceptable limits after the initial four fins have been engaged with the launcher, and again after all eight fins have been engaged.
- Adjustable platform inserts shall not be in contact with any stage during initial setting of the nose blocks at fin positions 2, 4, 6 and 8.

CONFIGURATION: Stage erected and resting on four of its support points.

SIVB and/or IU may or may not be stacked.

TEST REQUIREMENTS: MSFC - 3.4.0.2

PEV DATE	REASON	Contractor Approval KSC Appro
White Co.	8 ORGANIZATION	9. DATE /0 - 4 - 7/
D. Oberline/W. O. Br	OWN CCSD	12. APPROVAL DATE

APOLLO SATURN TEST AND OPERATIONS CATALOG (SHEET 2)

PAGE 2 OF 2

I TEST 1.TLE

MATING AND ALIGNMENT OF SIB STAGE TO LAUNCHER

V-23275

206 \$ SURS

1) LOCATION LAUNCHER PHOC. INDENTIFICATION
POCK - VAB

N/A

8.0 HOURS

- 1. SIB vehicle mechanical personnel to open SIB adjust able inserts.
- SIVB vehicle mechanical personnel to open SIVB adjust able inserts. (If SIVB and/or IU is stacked)
- 3. GSE mechanical personnel to adjust nose blocks.
- 4. IBM PERSON EL TO OPERATE OPTICAL INSTRUM- T'.

17 OTHER APPLICABLE REFERENCE DOCUMENTATION

NONE

18 ITEM CONTINUATION

de de del code

KSC OPERATIONS APOLLO SATURN TEST AND OPERATIONS CATALOG SHEET	PAGE 1 OF 2
· est · · · •	V-23276
MEASURE SATURN IB STAGE ALIGNMENT	206 & SUES

VERIFY SIB STAGE ALIGNMENT WITH RESPECT TO LOCAL GRAVITY VECTOR.

- IN A PT ON EG. PHENT STATIS CONFIGURATION

THIS TEST X DOES DOES NOT CONTAIN HAZARDOUS OPERATIONS.

Stage alignment measurements shall be made after the stage has been aligned to the launcher. Stage targets are scanned optically to obtain target displacement data. Displacement data is translated to angular data which reflects the alignment of the stage centerline to the local gravity vector.

TEST REQUIREMENTS

MSFC - 3.4.0.3 LV - B.1.3.3

-	1 1.00	PINISH LIFECTI	VITY		Peterren	A. W. Ely
-	1 (23,/73	ELEPTY LY TES	T REQUIREMENTS ON TEST C	ATALOG	Cotorous.	Mekamilia
В	10-6-72	To add Test !	Requirement 1.3.3		Cotton	mekanke.
A	8-14-72	Hazardous L Due to Opera	evel Change ting Height		Totarcin	W. chemico
1 55/	DATE		REASON	E. T	Contractor Approval	KSC Approval
D.	Dierlin W	O. Brown	CCSD		10-4-71	
	1/370	2	11 ORGANIZATION	12.	10/017/	

APOLLO SATURN	TEST AND OPERATIONS CATALOG (SHEET 2)	FAGE 2 05 2	
TEST TITLE		V-23276	
MEASURE SATURN IB STAGE ALIGNMENT		206 4 8088	
13 LOCATION Launcher -	OMPUTER PROC INDENTIFICATION	fs Fs ng	
Pedestal-VAB	N'A	2.0 Hours	
16 SUPPORT REQUIREMENTS	TENTON EL TO ATURNO A COMPANA A		

17 OTHER APPLICABLE REFERENCE DOCUMENTATION

Dwg. 10M04167

18. ITEM CONTINUATION

	. APOLLO/SATURN TEST AND OPERATIONS CATALOG SH	EET	PAGE	_0F <u>~</u>
. TEST	TITLE		V-23279	PER
FL	IGHT CONTROL COMPUTER REDUNDANCY TEST (CTB2)		3. EFFECTIVITY	
	The state of the s	H. How I have	AS-206 & S	UBS
107	TO DETAIL THE STEPS NECESSARY TO PREPARE THE FLI	CHT CONTROL	COMPLETED A	ND.
^-	COMPUTER INPUT SUBSTITUTE PANELS FOR AUTOMATIC		- COMPUTER A	
8.	TO DETAIL THE STEPS NECESSARY TO LOAD AND EXECUTE REDUITORY TEST FROM THE SANDERS DISPLAY STATION		MATIC COMPUT	ER
c.	THE OBJECTIVE OF THIS TEST IS TO VERIFY CONTROL PATHS ARE OPERATING PROPERLY.	COMPUTER IN	NPUT SIGNAL	REDUNDANT
TEST	DESCRIPTION EQUIPMENT STATUS/CONFIGURATION		* 100	
THIS	TEST TO DOES TO DOES NOT CONTAIN HAZARDOUS OPER	TIONS.	and the ti	v or the gran
	ECRIPTION .		and the second	
	ALL DISCRETE SWITCHES ON THE FLIGHT CONTROL COMP			OMPUTER
в.	and the state of t			OMMANDS.
c.	AUTUMATIC FLIGHT CONTROL COMPUTER REDUNDANCY TES			LOADED,
D.	FLIGHT CONTROL COMPUTER INPUT STIMULUS WILL BE S	UPPLIED PRO	M THE LYDC/	LVDA AND
Ε.	CONTROL OF THE VARIOUS RELAY COMBINATIONS WILL E CONTROL COMPUTER RELAY MATRIX. THE CONTROL COMP AND RELAY CURRENTS WILL BE MONITORED THROUGHOUT	UTER COMPAR	RATORS; VALV	E CURRENTS:
: F.	LVDA LADDER OUTPUTS WILL BE USED TO CHECK THE SP THE FLIGHT CONTROL COMPUTER.	ACECRAFT RE	EDUNDANT REL	AYS IN
(cc	ONTINUED IN BLOCK 18, PAGE 2)			
DH A	ASE: III, IV TEST	REQUIREMENT	re	
7	1231	KEQUI KEMENI	_	
	MSFC:		1 227.00	-011-001-2H 7.0.1
		0.3.1.2.2		
		0.3.1.2.2		
8	8/27/74 REVISED MSFC REQUIREMENTS	0.R	Raining	A. 21. 82 74
Д	08-29-3 PEVISE BLOCK 16	8.	BiHorp	DW Elyw 1/2
PEV.	FACTOR APPROVAL S. ORGANIZATION	9. DATE	tractor Approval	KSC Approval
ZL	Llighter 4/12/72 IBM - 918	192	4/12/72	
0. MASA	11. ORGANIZATION	12. APPR	OVAL DATE	7 77

LV-GDC-33

4/13/72

PAGE 2 OF 2 W	
V-23279	
AS-206 & SUBS	
6 MEN - 1 HOUR	

Market Company of the American

INTERSTAGE:

IU GROUND AND STAGE POWER

S-IVB STAGE POWER

OFF-COMPLEX:

N/A

ON-COMPLEX:

FACILITY COMMUNICATIONS (OIS)

LVDC/LVDA SYSTEM

17. OTHER APPLICABLE REFERENCE DOCUMENTATION

NONE

18. ITEM CONTINUATION

(CONTINUED FROM BLOCK 5, PAGE 1)

CONFIGURATION

A. THE LVDC/LVDA FLIGHT CONTROL COMPUTER, CONTROL/EDS RATE GYROS AND THE CONTROL SIGNAL PROCESSOR INSTALLED IN THE LAUNCH VEHICLE.

THE SPACECRAFT SIMULATOR WILL BE INSTALLED FOR THE SPACECRAFT RELAY REDUNDANCY OPTION.

- B. S-IVB HYDRAULIC POWER WILL BE OFF FOR THIS TEST.
- C. S-IB HYDRAULIC POWER MAY BE ON WHEN THIS TEST IS PERFORMED AS A PART OF COUNTDOWN EXERCISES.

EQUIPMENT STATUS

A. THE FOLLOWING TEST EQUIPMENT WILL BE USED:

N/A

B. THE FOLLOWING PROCEDURES/TEST MUST BE COMPLETED PRIOR TO PERFORMING THIS TASK:

1. V-23153

2. V-23281

			The same of the sa	
KSC OPERATIONS APOLLO SATURN TEST AND OPERATIONS CATALOG SHEET	PAGE 1 OF 2		· APOLLO'SAT	TURN TEST AND OPERATE
TEST TITLE	2. KSC TEST NUMBER		1. TEST TITLE	
FLIGHT SCHIROL COMPUTER & CONTROL ACCELEROMETER RAMP	V-23280	-	FLIGHT CONTROL GENERATOR CALIB	COMPUTER AND CONTROL
GENERATOR CALIBRATION	AS-206 & SUBS		13. LOCATION	14. COMPUTER PROC. INDENT
TEST COLECTIVES			LC-39	NOT REQUIRED
TO VERIFY PROPER OPERATION OF THE DIGITAL RAMP GENERATORS II	N THE ML ESE		INTERSTAGE:	IU GROUND
		1	OFF-COMPLEX:	N/A
			ON-COMPLEX:	QUALITY AS
TEST DESCRIPTION EQUIPMENT STATUS CONFIGURATION			Higgs 1 Jan	FACILITY CO
THIS TEST DOES X DOES NOT CONTAIN HATARDOUS OPERATIONS.		1	durant stress	
TAIS 1234 DOES TO CONTAIN THE MEDICAL PROPERTY.	print out the		Article Control of	AND DESCRIPTION OF THE
CESCA IPTIO:			g- and continue the	safety of the same
THIS PROCEDURE PROVIDES STEPS FOR ADJUSTING THE POWER SUPPLY			The second second	
THE AMPLITUDE, AND MERIFYING THE SLOPE OF THE RAMP GENERATOR	RS.	1 65	17. OTHER APPLICABLE RE	FERENCE DOCUMENTATION
EQUIPMENT STATUS		200	NONE	
A. THE FOLLOWING TEST EQUIPMENT WILL BE USED:			18. ITEM CONTINUATION	
1. DVM, H/P 3440A W/3445A PLUG IN OR EQUIVALENT.				
			CONTRACT LAND IN SEC.	
2. DECADE BOXES (2 EA) CLARO - STAT 240-C OR EQUIVAL	Carlo and Carlo and Carlo and Carlo			
3. GE H/P ELECTRONIC COUNTER MODEL 5532L OR EQUIVAL	ENT.			
4. ONE PORTABLE RECORDER, BRUSH MARK 280, OR EQUIVAL	ENT.	20		
E. THE FOLLOWING PROCEDURES/TEST MUST BE COMPLETED PRIOR	TO PERFORMING THIS TASK:	13		THE PARTY OF THE P
N/A		2		
CONFIGURATION TEST R	EQUIREMENTS			
W/A III WIE MASEC:	7921601			
	0.3.1.2.3.3.2			
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		1 6		and the second of the
many to the first of the state		e z		
A 18/27/74 REVISED MSEC REQUIREMENTS	E. R. Reminy / x Ely-	- 3		
S REV. CATE PEASON	Contractor Approval KSC Approval			to the least the later of the l
* CONTRACTOR OF THE CONTRACTOR	DATE			
12 MANA CA ADERO (AL)	4/12/72	- y		
		N.		
Reorge W. Ely LV-GDC-33	4/13/72	J & L	THE RELEASE	
AND COMMESSION TO SELECTION OF THE SELEC		2;		· · · · · · · · · · · · · · · · · · ·
on the first of the state of th	al a grant of the said and			

APOLLO'SATUR	N TEST AND OPERATIONS CATALOG (SHEET 2)	PAGE 2 OF 2
FLIGHT CONTROL CON GENERATOR CALIBRA	MPUTER AND CONTROL ACCELEROMETER RAMP	V-23280 S EFFECTIVITY AS-206 & SUBS
LC-39 NOT REQUIRED		3 MEN - 4 HOURS
S. SUPPORT REQUIREMENTS	Land of Early State of State o	
INTERSTAGE:		
OFF-COMPLEX:	N/A	
ON-COMPLEX:	QUALITY ASSURANCE FACILITY COMMUNICATIONS (015) ESE DDAS	
e management so	er der digitation in Louis (2014) and product	au system in Tresherite
OTHER APPLICABLE REFE		
NONE	in the case of the control of the case of	
ITEM CONTINUATION	terred was transmit the area site, and all	The Part of the Bridge and the Bridge
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	The same and the same	
DAMES.		
Description		
CM-EX- DOMESTALL	The state of the s	
Code Bis -Dodd pd.	The state of the s	
Cod. To Code for . Cod 1940;		
Cod. To Code for . Cod 1940; Cod 194	- Control of the second	
Challes Daniel Sci. Saillying Liver again Saillying Liver again Saillying Saillyi	To produce the second s	

KSC OPERATIONS APOLLO SATURN TEST AND OPERATIONS CATALOG SHEET	PAGEOF3_
TEST TITLE	Z. KEC TEST NUMBER
FLIGHT CONTROL COMPUTER SUBSYSTEM TEST	V-23281
TENNIN GOVINGE CO L'OLEN SOBSISTENTES	AS-206 & SUBS
TEST OB, ECTIVES	
TO PERFORM INPUT POWER VERIFICATION TEST, STATIC NULL OFF-SI LIMITER TEST, SIVE BURN ENABLE REDUIDANCY CHECK, SIE MODE CO PSI AND PHI DOT INPUT REDUIDANCY TEST, T.M. OUTPUT VERIFICATION.	OMMAND AT LIFTOFF CHECK,
TEST DESCRIPTION EQUIPMENTSTATUS CONFIGURATION	
THIS TEST DOES X DOES NOT CONTAIN HAZARDOUS OPERATIONS.	
DESCRIPTION:	
A. THE REDUNCANT INPUT POWER FOR FLIGHT CONTROL COMPUTER W MAGNITUDE AND POLARITY PRIOR TO INITIAL UNIT CABLE CONN	
B. FLIGHT CONTROL COMPUTER OPERATION IS VERIFIED UTILIZING	FACH OF ITS INDIVIDUAL
REDUNDANT POWER INPUT CAPABILITIES.	DAGILO III III III III III III III III III
C. THE STATIC HULL OFFSETS OF THE FLIGHT CONTROL COMPUTER A	WILL BE VERIFIED AND
D. VERIFICATION OF THE FCC TELEMETRY FOR TEMP, MODES, SERVI POWER INPUTS, AND INVERTER DETECTOR.	O, AND SPATIAL COMPARATOR
E. CALIBRATE WITH PSI INPUTS, THE FCC PSI PANEL METERS AND CHAIRMELS. MEASURING STATION WILL VERIFY AND RECORD PSI	
(CONTINUED IN BLOCK 18, PAGE 2)	
TEST REQUIREMENTS	
PHASE: 111 MSFC: 7921031 TM-011-001-	ZHI ·
0.3.1.2.0.4.1', B 7.0.1	
0.3.1.2.0.4.1 B 7.0.1	
0.3.1.2.0.6.1.2	
0.3.1.2.2.6.3	
B 3/27/74 REVISED MSFC PEQUIPEMENTS	C. R. Rames A. W. Ein
A 10/18/72 REVISE TEST REQUIREMENTS AND BLOCK 18	28 11 to ym er
REV. DATE	Contractor Approval KSC Approval
CONTRACTOR APPROVAL A OPCANIZATION 9 0	
16 11 to 4/13/15 TBM	4/12/72

LV-GDC-33

APOLLO/SATURN TEST AND OPERATIONS CATALOG (SHEET 2)	PAGE 2 OF 3
I. TEST TITLE	Z. NSC YEST NUMBER
FLIGHT CONTROL COMPUTER SUBSYSTEM TEST	V-23281 AS-206 & SUSS
13. LOCATION LCC/TU/LC-39 14 COMPUTER PROC. INDENTIFICATION N/A	6 MEN - 10 HOURS

16. SUPPORT REQUIREMENTS

INTERSTAGE: IU GROUND AND STAGE POWER

SIVB STAGE POWER

OFF-COMPLEX: N/A

ON-COMPLEX: QUALITY ASSURANCE

FACILITY COMMUNICATIONS (OIS)

LVDC/LVDA SYSTEMS 1U ELECTRICAL 1U MEASURING SIVB MEASURING

17. OTHER APPLICABLE REFERENCE DOCUMENTATION

NONE

18. ITEM CONTINUATION

BLOCK 5 CONTINUED FROM PAGE 1

- F. THE CAPABILITY OF THE FLIGHT CONTROL COMPUTER TO LIMIT THE SPACECRAFT STEERING COMMAND (SIMULATED) VOLTAGE LEVELS WILL BE VERIFIED.
- G. THE REDUNDANT INPUT CAPABILITY TO ENABLE SIVE BURN MODE WILL BE VERIFIED.
- H. THE ABILITY TO COMMAND THE FLIGHT CONTROL COMPUTER TO THE S-IB BURN MODE AT LIFTOFF WILL BE VERIFIED.
- I. PSI AND PHI DOT REDUNDANT INPUT CIRCUITRY WITHIN THE FCC WILL BE VERIFIED.

EQUIPMENT STATUS

- A. THE FOLLOWING TEST EQUIPMENT WILL BE USED:
 - 1. INTERRUPT BOX-8 PIN-P/N JB2P0193 OR EQUIVALENT.
 - 2. INTERRUPT BOX-23 PIN-P/N JB2P0217 OR EQUIVALENT.
 - 3. INTERRUPT BOX-30 PIN-P/N JB2P0231 OR EQUIVALENT.
 - 4. INTERRUPT BOX-61 PIN-P/N JB2P0229 OR EQUIVALENT.
 - 5. INTERRUPT BOX-55 PIN-P/N JB2P0228 OR EQUIVALENT.
 - 6. DIGITAL VOLTMETER, HP3440, OR EQUIVALENT.
 - 7. SIMPSON 260.
- B. THE FOLLOWING PROCEDURES/TEST MUST BE COMPLETED PRIOR TO PERFORMING THIS TASK:

NONE

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CLLO/SATURN TEST AND OPERATIONS CATALOG SHEET (CONTINUATION SHEET)	PAGE 3 OF 3	
TECT	2. KEC TEST NUMBER V-23281	
	AS-206 & SUBS	
M CONTINUATION		
BLOCK 5 CONTINUED FROM BLOCK 18, PAGE 2		
ofigration		
LIGHT CONTROL COMPUTER INSTALLED IN LAUNCH VEHICLE.		
그 보다 한 일을 받는 그는 사람들이 많아 가는 것이 없는 것이다.		
그의 문 집에는 그녀들의 불빛들이 가장 말했다. 그리나 그		
그릇도 되었습니다 중요를 전혀 있었습니다 시간 하셨다. 그 없다.		
그렇게 보다 그런 그는 그는 전부가 그렇다는 살짝		
그리고 하는데 그는 이렇게 말이 통하는데 하나 되는 것은 아름다를 살았다.		
는 사용에 불고함하면 사용하여 가장 가장 하는 사용을 받았다. - 사용에 발표하는 사용하는 사용하는 사용하는 사용하는 사용하는 사용하는 사용하는 사용		
그램 그 살았는지 않는 아이들이 얼굴에 그는 모델스 전쟁이다.		
병속로 되는 그들은 이 맛이다는 그들이 맛을 보았다.		
교통하는 경찰 일반 환화 및 기술 관계 등을 대출하면 입하다고 말했다.		
원범의 경기 그 없는데 보통 이 등록 없는 원인이 하고 있다.		
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도 있다. 그리는 말중요를 존속하는 하다는 말하다고 하는다.		

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Det September 1900 kalpfatte selle film sellen sälle selle selle selle selle selle selle selle salte.
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APOLLO/SATURN TEST AND OPERATIONS CATALOG SHEET	PAGE 1 0F 2	
1. TEST TITLE	V-23282	
CONTROL ACCELEROMETER FUNCTIONAL, SCALE FACTOR, POLARITY AND MEASURING CALIBRATION TEST	206 & SUBS	

A TEST CBIECTIVES

THE OBJECTIVES OF THIS TEST PROCEDURE ARE:

- 1. TO PERFORM A FUNCTIONAL TEST TO VERIFY SCALE FACTORS.
- 2. TO PERFORM A POLARITY CHECK.
- 3. TO VERIFY THE MEASURING CALIBRATION CURVES AND TO CALIBRATE THE FLIGHT CONTROL RECORDER GAMMA DOUBLE DOT CHANNELS AND THE GSE GAMMA DOUBLE DOT PANEL METERS.

S TEST CESCR PT ON EGU PHENT STATUS CONFIGURATION

THIS TEST. DOES XX DOES NOT CONTAIN HATARDOUS OPERATIONS.

DESCRIPTION

- 1. THE CONTROL ACCELERUMETER WILL BE CHECKED FOR FUNCTIONAL OPERATION AND SCALE FACTORS BY THE USE OF TILT TABLE(S) INSTALLED IN THE 1U STAGE.
- 2. THE CORRECT POUNTTY WILL BE VERIFIED BY PHYSICALLY TILTING THE CONTROL ACCEL-EPOMETER WHILE ELECTRICALLY CONNECTED, IN FLIGHT CONFIGURATION IN THE 1U STAGE.
- 5. ESE TEST SIGNALS (DIGITAL RAMP GENERATOR RAMP COMMANDS) WILL DRIVE THE CONTROL ACCELERAMETER CUTRUIT SIGNAL TO SEVERAL PREDETERMINED VALUES. AT EACH OF THESE VALUES, THE ID MEACURING STATION WILL VALIDATE COMPONENT PERFORMANCE WITH MEASUREMENT CALIBRATION CURVES, AND THE FLIGHT CONTROL RECORDERS AND ASSOCIATED PARE METERS WILL BE CALIBRATED.

PHASE: 111

TLST REQUIREMENTS

MSFC: 7921601

0.3.1.2.0.4.1 0.3.1.2.3.3.1 0.3.1.2.3.3.4

0.3.1.2.0.3.1

MSFC: TM-011-001-2H B.1.1.1.1.2

E	8-27-75	1 85V1510 15F0	PEOUT PEMELITS	7 5 7/1/2 4
	-			CR Rain Fr AN The S.
3	08-29-3	PEVIBLIBILITY	. 10	1.3 Billans Durch
~	5/18/2	REVISE BLOC	FS 1, 4, 5 AND 16	Il's Wite Huge WELY
a E	DATE		REASON	Contractor Approval KSC Approval
	THA TOH APP H.D. PESTE	./ /	A OPSANIZATION - 918	9 DATE 4/12/72
	ELI	A CONTRACTOR OF THE PARTY OF TH	3 4 2 - 29-71 LV-GDC-55	12 APPROVAL DATE 4/13/72

- APOLLO/S	PAGE 2 OF 2		
CONTROL ACCELEROMETER FUNCTIONAL, SCALE FACTOR, POLARITY AND MEASURING CALIBRATION TEST		V-25282 S. EFFECTIVITY 206 & SUBS	
S. SUPPORT REQUIREM	ENTS		
INTERSTAGE:	GROUND POWER, IU POWER, SIVB POWER		
OFF-COMPLEX:	N/A		
ON-COMPLEX:	QUALITY ASSURANCE	* * * * * * * * * * * * * * * * * * *	
10			
7. OTHER APPLICABLE	REFERENCE DOCUMENTATION .		
NONE .			
8. ITEM CONTINUATION			
are the day to			
South Co.			
to the deep of the			
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KSC OPERATIONS APOLLO/SATURN TEST AND OPERATION	S CATALOG SHEET	PAGE OF
1. TEST TITLE		V-23283
FUNCTIONAL CHECK OF ESE RECORDERS	(STANDBY)	AS REQUIRED

4 TEST OBJECTIVES

A. TO VERIFY THAT THE LCC RECORDER SYSTEM IS READY TO SUPPORT VEHICLE TESTING.

5. TEST DESCRIPTION EQUIPMENT STATUS CONFIGURATION

THIS TEST DOES DOES NOT CONTAIN HAZARDOUS OPERATIONS.

DESCRIPTION

- A. THIS PROCEDURE WILL VERIFY THE COMPATIBILITY BETWEEN THE ANALOG RECORDER CONTROL PANEL AND THE RECORDER SYSTEM. ALSO THE CALIBRATION VOLTAGES WILL BE SET UP.
- 3. BASELINE CHARTS WILL BE ESTABLISHED FOR THE FUNCTIONAL TEST.
- C. THIS PROCEDURE WILL VERIFY THE FUNCTIONAL OPERATION AND CALIBRATION OF THE RECORDER SYSTEM PRIOR TO TESTING PERFORMED AFTER MEASURING CALIBRATION.

EQUIPMENT STATUS

- A. THE FOLLOWING TEST EQUIPMENT WILL BE USED:
 - 1. DVM, H/P 344CA W/3445A PLUG IN OR EQUIVALENT.
- B. THE FOLLOWING PROCEDURES/TEST MUST BE COMPLETED PRIOR TO PERFORMING THIS TASK:
 - 1. N/A

CONFIGURATION: N/A

TEST REQUIREMENTS

175 =

MSFC: N/A

S REV. DATE	REASON	Contractor Approval	KSC Approval
The the te 4/12/	B ORGANIZATION	9. DATE 4/12/72	
10 NASA NSC APPHOVAL	11. ORGANIZATION	12. APPROVAL DATE	
George W. Ely	LV-GDC-33	4/13/72	

PAGE 2 OF 2 APOLLO SATURN TEST AND OPERATIONS CATALOG (SHEET 2) 2. KSC TEST NUMBER V-23283 . EFFECTIVITY FUNCTIONAL CHECK OF ESE RECORDERS (STANDBY) AS REQUIRED 13. LOCATION 14. COMPUTER PROC. INDENTIFICATION 15. EST. TEST TIME LC-39 NOT REQUIRED 2 MEN-4 HOURS 16. SUPPORT REQUIREMENTS INTERSTAGE: IU GROUND POWER OFF COMPLEX: N/A ON-COMPLEX: QUALITY ASSURANCE 17. OTHER APPLICABLE REFERENCE DOCUMENTATION NONE 18. ITEM CONTINUATION

S/ P. W. SCHMID

VAB	N/A PS CRANE TY ICAL	60c18209 60c18210 60c18211	60C182 50C182	260	ME
VAB INTERSTAGE: S-IVB MECH OFF-COMPLEX: BENDIX SHOP ON-COMPLEX: 250/25 TON PLATFORMS VAB DOORS IBM QA KSC SAFETY KSC SECURI SWING ARMS IBM MECHAN: 17. OTHER APPLICABLE REFERENCE DOC TM-011-001-2H MIL-C-5541 HT-322-13000 K-V-053 13M50202	N/A PS CRANE TY ICAL FUNENTATION V-26547	60c18209 60c18210	60C182	6 MEN - 13	
INTERSTAGE: S-IVB MECH OFF-COMPLEX: BENDIX SHOP ON-COMPLEX: 250/25 TON PLATFORMS VAB DOORS IBM QA KSC SAFETY KSC SECURI SWING ARMS IBM MECHAN: 17. 6THER APPLICABLE REFERENCE DOC TM-011-001-2H HT-322-13000 HT-322-13000 K-V-053 13M50202	CRANE TY ICAL UMENTATION V-26547	60C18210	60C182	260	
OFF-COMPLEX: BENDIX SHOP ON-COMPLEX: 250/25 TON PLATFORMS VAB DOORS IBM QA KSC SAFETY KSC SECURI SWING ARMS IBM MECHAN: 17. 6THER APPLICABLE REFERENCE DOC TM-011-001-2H MIL-C-5541 HT-322-13000 K-V-053 13M50202	CRANE TY ICAL UMENTATION V-26547	60C18210	60C182	260	
ON-COMPLEX: 250/25 TON PLATFORMS VAB DOORS IBM QA KSC SAFETY KSC SECURI SWING ARMS IBM MECHAN: 17. OTHER APPLICABLE REFERENCE DOC TM-011-001-2H MIL-C-5541 HT-322-13000 7921601 K-V-053 13M50202	TY ICAL UMENTATION V-26547	60C18210	60C182	260	
PLATFORMS VAB DOORS IBM QA KSC SAFETY KSC SECURI'SWING ARMS IBM MECHAN: 17. 6THER APPLICABLE REFERENCE DOC TM-011-001-2H MIL-C-5541 HT-322-13000 K-V-053 13M50202	TY ICAL UMENTATION V-26547	60C18210	60C182	260	
17. OTHER APPLICABLE REFERENCE DOC TM-011-001-2H MIL-C-5541 HT-322-13000 7921601 K-V-053 13M50202	ICAL CUMENTATION V-26547	60C18210	60C182	260	
TM-011-001-2H MIL-C-5541 HI-322-13000 7921601 K-V-053 13M50202	V-26547	60C18210	60C182	260	
18. ITEM CONTINUATION			•		
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APOLLO	KSC SATURN TEST	OPERATIONS CAND OPERATIONS C	CATALOG SHEE	Т	PAGE 1	or2
TEST TITLE					2 V-2 4225	MBER
INCTORME	NT UNIT DEMA	TING (STANDBY)	.		3 EFFECTIVITY	
INSTRUME	MI DITT DEMM	TING COTMIDDE,			AS REQUI	
TEST OBJECTIVES			,			······································
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TEST DESCRIPTION	Y EQUIPMENT STATUS	CONFIGURATION				·
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		ALL CRITICAL C				
CONNECTI	NG ENVIRONME	NTALCONTROL AND	ELECTRICAL	L CONNE	CTIONS BE	TWEEN THE
IU AND S	-IVB HAVE BE	EN DISCONNECTE STING SLING, U	D, UMBILICA	AL CONN	ECTIONS H	AVE BEEN
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ERECTION						
		ITH UDDER DRAT	ECTION DIN	C CIE N	ECECCADY)	ADE EDEC:
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APOLLO/S	ATURN TEST AND OPERATIONS CATALOG (SHEET 2)	PAGE	2 of 2		
TEST TITLE	UNIT DEMATING (STANDBY)	2. KSC TEST			
	ONLY SELECTION COVERED LY	AS REQUIRED			
LOCATION	14. COMPUTER PROC. INDENTIFICATION	19. EST. TES			
VAB	N/A	6 MEN	12 HOURS		
INTERSTAGE:					
OFF-COMPLEX:	BENDIX SHOPS				
ON-COMPLEX:	750/25 TON CRANE PLATFORMS VAB DOORS IBM QA				
	KSC SAFETY SECURITY SWING ARMS	-			
	SWING ARMS				
K-V-053		7200 materia (m. 1910)	and a superstance of the superst		
•					
	· · · · · · · · · · · · · · · · · · ·				

4 TEST CBJECTIVES

TO VERIFY THE IN PREUMATIC SYSTEM AND THERMAL CONDITIONING SYSTEM FLOWS, PRESSURES AND TEMPERATURES ARE WITHIN LIMITS.

S TEST CESCAIPTION EQUIPMENT STATUS CONFIGURATION

THIS TEST ___ DOES _______ DOES NOT CONTAIN HAZARDOUS OPERATIONS.

DURING NORMAL POWER ON, IN CLOSED LOOP CONFIGURATION, THE SYSTEMS ARE TESTED BY VARYING THE GROUND COOLANT TEMPERATURE AND MONITORING OR RECORDING CRITICAL FLOW PATES, TEMPERATURES AND PRESSURES. ADDITIONAL MEASUREMENTS ARE RECORDED FOR REFERENCE. CAPABILITY TO EMERGENCY VENT AIRBORNE TO 802 SYSTEMS TO 1000 PSI IS VERIFIED, INCLUDING VENTING WITH GROUND POWER ONLY.

CONFIGURATION: VEHICLE IS ERECTED, STAGE POWER APPLIED, CLOSED LOOP CONFIGURATION.

TEST REQUIREMENTS

AS-206 & SUBS MSFC: 7921601 TM-011-001-2H

B.1.7.1.2

0.3.5.2.5.1 0.3.5.2.5.1.1 0.3.5.2.5.1.2.1 0.3.5.3.3 0.3.5.2.5.3 0.3.5.2.5.2 0.3.5.2.5.1 0.3.5.2.5.1

PHASE: III

	SEE BLOCK	18 FOR REVISION HISTORY		12.13 (R. Long	All	
S PE . DA	7 E	HEASON		Contractor Approvat	KSC Approval	
7 CONTRACTO	D APPROVAL	6 ORGANIZATION	9	DATE		
5.7%. B. H	UNT	IBM - K73		OCTOBER 3, 1967		
IL MAIA-KEC A	PPAGYAL	11. OHGANIZATION	12	APPROVAL DATE		
5/P. W. S	OMID	JD-25		OCTOBER 6, 1967		

APOLLO	SATURN TEST AND OPERATIONS CATALOG (SHEET 2)	PAGE 2 OF 2
1. TEST TITLE		2. NSC TEST NUMBER V=24228
10 5	PNEUMATIC & TCS TEST	AS-299 & SUDS
13. LOCATION VAB	14. COMPUTER PROC. INDENTIFICATION N/A	18. EST. TEST TIME 3 MEN, 4 HOURS

16. SUPPORT REQUIREMENTS

INTERSTAGE: S-IVB STAGE POWER (EXCEPT AS-513 & AS-515)

OFF-COMPLEX: N/A

ON-COMPLEX: IBM QA

IBM MEASURING
IU STAGE POWER
IBM MECHANICAL

IBM ELECTRICAL NETWORKS

7. OTHER APPLICABLE REFERENCE DOCUMENTATION

MSFC-MAN-008 K-V-053 MSFC-MAN-014 7921601 MSFC-MAN-036

IS. ITEM CONTINUATION

1		•		
К	8/5/74	REVISED BLOCKS 3, 5 C 17	52 X 64 2 mrs.	2-1/2014
J	2/17/73	REVISE BLOCKS 5 & 17	24 Est (C 1997)	
I	9/18/72	REVISED BLOCKS 3,5, & 16	A Freder VAITE	Letinar
Н	4/19/72	REVISED BLOCKS 3,5, & 17	4-20-72 S/G. LECKIE	S/P. SCHMIC
G	3/24/72	REVISED PER SPEC & CRITERIA	3-24-72 S/G. LECKIE	S/P. SCHMID
F	9/7/71	REVISE PER SPEC & CRITERIA	S/G. LECKIE	S/P. SCHMID
E	6/16/71	REVISE MSFC REQUIREMENTS	6-16-71 S/G. LECKIE	S/P. SCHMID
D	12/12/9	REVISE MSFC REQUIREMENTS, BLK.5816	s/J!-Pēūkkung	S/P. SCHMID
C ·	5/23/9	REVISE MSFC REQUIREMENTS	S/J. PEURRUNG	S/P. SCHMIC
В	9/20/8	ADDITION OF LV REQUIREMENT	S/J.H. HANSEN	S/P, SCHMID
Α	8/5/8	UPDATE MSFC REQUIREMENTS	S/J.H.HANSEN	S/P. SCHMID
REV.	DATE	REASON	CONTR. APP.	KSC APP.

KSC OPERATIONS APOLLO SATURN TEST AND OPERATIONS CATALOG SHEET	PAGEOF
TEST TITLE	2. KSC TEST NUMBER V-24298
OF PREUMATIC SYSTEM LP TEST	AS-206 & SUBS

4 TEST DEJECTIVES

TO VEHIEF THE PREUMATIC SYSTEM IS LEAK TIGHT AND TO FUNCTIONALLY CHECK THE PRESSURE SAITCH AND/OR ADJUST THE FIRST STAGE REGULATOR

TEST CESCRIPTION EQUIPMENT STATUS CONFIGURATION

THIS TEST X DOES COES NOT CONTAIN HAZARDOUS OPERATIONS.

GNO IS SUPPLIED THROUGH THE PRESUMATIC CONSOLE, ACROSS THE SWING ARM TO PRESSURIZE. THE BEARING AND COOLING GNO SYSTEMS INCREMENTS TO 1700 PSIG. GNO LINES AND COMPOSITS ARE LEAK CHECKED USING LEAK DETECTOR SOLUTION. THE OUTLET PRESSURE OF THE FIRST STAGE REGULATOR IS MONITORED AND ADJUSTED, IF REQUIRED, TO MAINTAIN A PRESSURE OF 16.5 % O.5 PSIA. THE OUTLET PRESSURE OF THE ST-124 AIR BEARING REGULATOR IS MONITORED TO VERIFY LINE PRESSURE IS NOT EXCESSIVE. THE ACTUATION/DEACTUATION PRESSURE OF THE PRESSURE SWITCH IS MONITORED.

THE ST-124 PLATFORM PURGE LINE IS PRESSURIZED ALD LEAK CHECKED. A TEST PANEL IS CONNECTED TO THE BLEED ASSEMBLY TO PRESSURIZE THE LINES AND FITTINGS DOWNSTREAM OF THE FIRST STAGE REGULATOR TO 20 PSIG FOR LEAK TESTING.

ALL DATA IS RECORDED ON A DATA SHEET.

CONFIGURATION: VEHICLE STACKED, ST-124M EITHER INSTALLED OR NOT INSTALLED, STAGE POWER IS NOT APPLIED.

(SEE PAGE 2, BLOCK 18 FOR TEST REQUIREMENTS)

F	8-6-74	REVISED BLOCKS	3, 17 & MSFC REQUIREMENTS		DR Quely	Allelis
Ē	4-19-2	REVISED BLOCKS	3, 5, 16 & 17		G.E. LECKIE	P.W. SCHMID
ū	1-7-70	PEVISE MUFC REG	UIPEMENTS		J.C. PEURRUNG	P.W. SCHMID
c	5-23-9	PEVISE MSFC REC	WIREMENTS .		J.C. PEURRUNG	P.W. SCHMID
٤	3-26-9	REVISE CONFIGUR	ATION		J.C. PEURRUNG	P. W. SHCMID
1	10-15-8	ADDITION OF MSF	C DOCUMENT NUMBERS		J. H. HANSEN	P. SCHMID
S PEV	DATE	eres and a second second	REASON		Contractor Approval	KSC Approval
1	B. HUNT	HOVAL CO	B ORSANIZATION IBM - 906		SEPTEMBER 29, 1	967
	SOM		UD-25	}	APPROVAL DATE 10-10-67	

APOLLO SA	TURN TEST AND OPERATIO	HS CATALOG (SHE	ET 2)	PAGE	2 or 2
TEST TITLE			e de la companya de l	2. KSC TEST	
IU PNEUMATIC SY	STEM LP TEST			V-24298	
•				AS-206	S SUBS
LC 39 A, B, C	14. COMPUTER PROC. INDENTIF	TICATION		2 MEN -	10 HOURS
SUPPORT REQUIREME	NTS .				W
INTERSTAGE:	N/A			•	
OFF-COMPLEX:	N/A				
ON-COMPLEX:	IBM QA				
	IU VEHICLE NET HP GAS				
	OIS			6.1	
	KSC SAFETY IBM MECHANICAL				
MSFC-PROC-195 MSFC-SPEC-164 MC-245	REFERENCE DOCUMENTATION MSFC-MAN-014 10419906 K-V-053	TM-011-001 7921601	-2H		
ITEM CONTINUATION					····
(BLOCK 5 CONTIN	UED FROM PAGE 1)			*	
	TECT DECUTEDATION				
	TEST REQUIREMENTS				
MSFC:	7921601				
	0.3.5.2.1.3 0.3.5.3.1.1				i avere
	0.3.5.3.1.1.1				•
	0.3.5.3.5.1				.1
	0.3.5.5.2				

KSC OPERATIONS APOLLO/SATURN TEST AND OPERATIONS CATALOG SHEET		PAGE OF
TEST TITLE IN PREUMATIC SYSTEM HP TEST	2	KBC TEST NUMBER V-24299
Is the state of th	ľ	AS-206 & SUBS

4 TEST OBJECTIVES

TO VERIFY THE PREUMATIC SYSTEM IS LEAK TIGHT AND TO FUNCTIONALLY CHECK THE SYSTEM FLOW RATES AND PRESSURES.

S TEST DESCRIPTION EQUIPMENT STATUS CONFIGURATION

THIS TEST "TX DOES

DOES NOT CONTAIN HAZARDOUS OPERATIONS.

THE HIGH PRESSUPE REGULATOR ON THE PREUMATIC CONSOLE IS ADJUSTED TO SUPPLY GN, TO THE MEDMATIC SYSTEM AT 3000 PSIG. THE AREA IS CLEARED AND THE SYSTEM IS PRESSURIZED BY REMOTE OPERATION FROM THE FIRING ROOM PANEL. TEMPERATURE AND PRESSURE IS STABILIZED FOR A MINIMUM OF 2 HOURS, THE FILL VALVES ARE CLOSED AND THE SPHERES PRESSURE BLEED RATE IS MONITORED FOR 2.5 HOURS.

AT THE END OF 2.5 HOURS THE PRESSURE IS REDUCED TO 1700 PSIG AND THE PNEUMATIC SYSTEM LINES, FITTINGS, ETC., ARE LEAK CHECKED USING LEAK DETECTOR SOLUTION.

CONFIGURATION: VEHICLE ERECTED WITH STAGE POWER APPLIED.

PHASE: III, IV

(SEE BLOCK 18 FOR MSFC REQUIREMENTS)

E U	9-7-71		SLOCKS 3, 5, 16 \$ 17 G.E. LECKIE G.E. LECKIE G.E. LECKIE J.C. PEURRUNG		
С	5-23-9	REVISE MSFC REC	OUTPEMENTS	J.C. PEURRUNG	P. SCHMID
. 	6-14-8	JPDATE MSFC REG	OUI REMENTS	J. HANSEN	P. SCHMID
÷	1-24-8	CAANGES IN BLOC	KS 1, 3, 5	J. HANSEN	P. SCHMID
6. PEV.			REASON	Contractor Approval	KSC Approval
S/W.B. HUNT		#SVAL	e organization 18M - 906	3 OCTOBER	1967
	SCHMAC	A CONTRACTOR OF THE PROPERTY O	JD - 25	12 APPROVAL DATE 10/16/67	

LC 39A, B, C N/A 2 MEN - 8 HOURS INTERSTAGE: SIVB STAGE POWER OFF-COMPLEX: N/A ON-COMPLEX: IBM QA MEASUREMENTS IU STAGE POWER KSC SAFETY DDAS OIS HP GAS IBM MECHANICAL IT. OTHER APPLICABLE REFERENCE DOCUMENTATION MSFC-MAN-014 MSFC-MAN-014 T921501 MSFC-MAN-008 TM-011-001-2H 10Z22204	APOLLO/S	ATURN TEST AND OPERATION	NS CATALOG (SHEET 2)		PAGE	2 or 2	
AS-206 SUBS	I. TEST TITLE			, , , , , , , , , , , , , , , , , , , 	i		
13. LOCATION LC 39A, B, C N/A N/A 2 MEN - 8 HOURS 10. SUPPORT REQUIREMENTS INTERSTAGE: SIVB STAGE POWER OFF-COMPLEX: N/A ON-COMPLEX: IBM QA MEASUREMENTS IU STAGE POWER KSC SAFETY DDAS OIS HP GAS 1BM MECHANICAL 17. OTHER APPLICABLE REFERENCE DOCUMENTATION MSFC-MAN-014 7921601 MSFC-MAN-014 7921601 MSFC-MAN-0108 TM-011-001-2H 10.722204 10. ITEM CONTINUED FROM PAGE 1) TEST REQUIREMENTS MSFC: 7921601 0.3.5.2.1.3.1 0.3.5.3.1.2 0.3.5.2.7.1 0.3.5.3.1.3.1 0.3.5.2.7.2 0.3.5.3.1.3.1 0.3.5.2.7.1 0.3.5.3.2.2 0.3.5.2.7.1 0.3.5.3.2.2	IU PNEUMATIC SY	STEM HP TEST	,	•	S EFFECT	IVITY	,
INTERSTAGE: SIVB STAGE POWER OFF-COMPLEX: N/A ON-COMPLEX: IBM QA	13. LOCATION	14. COMPUTER PROC. INDENTI	FICATION				
INTERSTAGE: SIVB STAGE POWER OFF-COMPLEX: N/A ON-COMPLEX: IBM QA					2 MEN	- 8 HOURS	
OFF-COMPLEX: N/A ON-COMPLEX: IBM QA	16. SUPPORT REQUIREM	ENTS					
ON-COMPLEX: IBM QA MEASUREMENTS IU STAGE POWER KSC SAFETY DDAS OIS HP GAS IBM MECHANICAL 17. OTHER APPLICABLE REFERENCE DOCUMENTATION MSFC-MAN-014 7921601 MSFC-MAN-008 TM-011-001-2H 1 0722204 18. ITEM CONTINUATION (BLOCK 5 CONTINUED FROM PAGE 1) TEST REQUIREMENTS MSFC: 7921601 0.3.5.2.1.3.1 0.3.5.3.1.2 0.3.5.2.7 0.3.5.3.1.3 0.3.5.2.7.1 0.3.5.3.1.3 0.3.5.2.7.2 0.3.5.3.2 0.3.5.2.7.1 0.3.5.3.2	INTERSTAGE:	SIVB STAGE POWER					
MEASUREMENTS IU STAGE POWER KSC SAFETY DDAS OIS HP GAS IBM MECHANICAL 17. OTHER APPLICABLE REFERENCE DOCUMENTATION MSFC-MAN-014 7921601 MSFC-MAN-008 TM-011-001-2H 10.222204 10.1ITEM CONTINUED FROM PAGE 1) TEST REQUIREMENTS MSFC: 7921601 0.3.5.2.1.3.1 0.3.5.2.7.1 0.3.5.3.1.3 0.3.5.2.7.1 0.3.5.3.1.3 0.3.5.2.7.1 0.3.5.3.3.1.3	OFF-COMPLEX:	N/A	•				
KSC SAFETY DDAS OIS HP GAS IBM MECHANICAL 17. OTHER APPLICABLE REFERENCE DOCUMENTATION MSFC-MAN-014 7921501 MSFC-MAN-008 TM-011-001-2H 1 0222204 10. ITEM CONTINUATION (BLOCK 5 CONTINUED FROM PAGE 1) TEST REQUIREMENTS MSFC: 7921601 0.3.5.2.1.3.1 0.3.5.3.1.2 0.3.5.2.7 0.3.5.3.1.3 0.3.5.2.7.1 0.3.5.3.1.3.1 0.3.5.2.7.2 0.3.5.3.2.2 0.3.5.2.7.1 0.3.5.3.2.1	ON-COMPLEX:						
OIS HP GAS IBM MECHANICAL 17. OTHER APPLICABLE REFERENCE DOCUMENTATION MSFC-MAN-014 7921601 MSFC-MAN-008 TM-011-001-2H 1 0Z22204 10. ITEM CONTINUED FROM PAGE 1) TEST REQUIREMENTS MSFC: 7921601 0.3.5.2.1.3.1 0.3.5.3.1.2 0.3.5.2.7 0.3.5.3.1.3 0.3.5.2.7.1 0.3.5.3.1.3 0.3.5.2.7.2 0.3.5.3.2.2 0.3.5.2.7.1 0.3.5.3.2.1			•		•		
IBM MECHANICAL 17. OTHER APPLICABLE REFERENCE DOCUMENTATION MSFC-MAN-014 7921501 MSFC-MAN-008 TM-011-001-2H 1 0222204 18. ITEM CONTINUATION (BLOCK 5 CONTINUED FROM PAGE 1) TEST REQUIREMENTS MSFC: 7921501 0.3.5.2.1.3.1 0.3.5.3.1.2 0.3.5.2.7 0.3.5.3.1.3 0.3.5.2.7.1 0.3.5.3.1.3.1 0.3.5.2.7.2 0.3.5.3.2.2 0.3.5.2.7.1.1 0.3.5.3.2.2 0.3.5.2.7.1.1 0.3.5.3.2.1	•		•				
MSFC-MAN-014 7921601 MSFC-MAN-008 TM-011-001-2H 1 0Z22204 10.ITEM CONTINUATION (BLOCK 5 CONTINUED FROM PAGE 1) TEST REQUIREMENTS MSFC: 7921601 0.3.5.2.1.3.1 0.3.5.3.1.2 0.3.5.2.7 0.3.5.3.1.3 0.3.5.2.7.1 0.3.5.3.1.3.1 0.3.5.2.7.2 0.3.5.3.2.2 0.3.5.2.7.1 0.3.5.3.2.1	•						
MSFC-MAN-014 7921501 MSFC-MAN-008 TM-011-001-2H 1 0Z22204 10-ITEM CONTINUED FROM PAGE 1) TEST REQUIREMENTS MSFC: 7921601 0.3.5.2.1.3.1 0.3.5.3.1.2 0.3.5.2.7 0.3.5.3.1.3 0.3.5.2.7.1 0.3.5.3.1.3 0.3.5.2.7.2 0.3.5.3.2 0.3.5.2.7.1 0.3.5.3.2 0.3.5.2.7.1 0.3.5.3.2	S. 100 Co. 100	y + 15					
TEST REQUIREMENTS MSFC: 7921601 0.3.5.2.1.3.1 0.3.5.3.1.2 0.3.5.2.7 0.3.5.3.1.3 0.3.5.2.7.1 0.3.5.3.1.3.1 0.3.5.2.7.2 0.3.5.3.2 0.3.5.2.7.1 0.3.5.3.2	MSFC-MAN-008 1 0Z22204	TM-011-001-2H					
0.3.5.2.1.3.1			•				
0.3.5.2.7	MSFC:	7921601					
0.3.5.2.7.1.1 0.3.5.2.1		0.3.5.2.7 0.3.5.2.7.1	0.3.5.3.1.3 0.3.5.3.1.3.1				
	ji di din Majalija Karana		0.3.5.3.2.1				
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	APOLLO/SATURH		PERATIONS CATALOG	SHEET	PAGE 1 0F 2
1 7687 1		-			2. HBC TEST NUMBER V-24391
IU W	ATER SYSTEM GN2	1E21			AS-206 & SUBS

TO VERIFY THAT THE IU WATER SYSTEM AND THE GN2 SYSTEM DOWNSTREAM OF THE IST STAGE REGULATOR IS LEAK FREE.

TEST DESCRIPTION EQUIPMENT STATUS/CONFIGURATION

THIS TEST DOES DOES NOT CONTAIN HAZARDOUS OPERATIONS.

THE GN2 SYSTEM DOWNSTREAM FROM THE 1ST STAGE REGULATOR IS LEAK CHECKED AT 20 PSIG.

THE WATER SYSTEM IS PRESSURIZED (WITH THE WATER VALVE CLOSED) TO 22.5 +0.0 -0.5 PSIG. THE WATER SYSTEM IS THEN LEAK CHECKED FROM THE WATER ACCUMULATOR TO THE WATER VALVE. ADDITIONALLY, WATER VALVE SEAT LEAKAGE IS CHECKED AT THE SUBLIMATOR VE'.T VAL /E. THE SYSTEM IS THEN DEPRESSURIZED AND RE-PRESSURIZED TO 7.0 \$ 0.5 PSIG. WITH THE WATER VALVE OPEN. THE WATER SYSTEM IS THEN LEAK CHECKED DOWN STREAM OF THE WATER VALVE.

CONFIGURATION: VEHICLE STACKED WITH STAGE POWER REMOVED.

TEST REQUIREMENTS

MSFC: 7921601

0.3.5.2.1.2 0.3.5.2.1.2.1 0.3.5.2.6.4 0.3.5.2.1.3

PHASE: 11, 111 OR IV

	W. SCHW		LV-MEC-25	AUGUST 8, 1	969
S.J.	C. PEURPI	JK	1BM - K73	AUGUST 8, 19)69
FREV.	DATE		REASON	Contractor Approval	KSC Approval
	1-7-69	PEVISE MSFC P	EQUIREMENTS	J.C. PEURRUNG	P. SCHMID
8	6-5-70	PEVISE EFFECT	IVITY	D. SCHMIDT	P. SCHMID
19-2 PEVISED BLOCKS 3, 5, & 17			G. LECKIE	P. SCHMID	
D 3-3-72 REVISED BLOCKS 4, 5, 15 & 17			G. LECKIE	P. SCHMID	
E :	8-6-74	REVISED BLOCKS	5 3, 5 & 17	D'K Relay	fashiller

AF OLLO/ JA	TURN TEST AND OPERATIO	INS CATALOG (SHEET	F 2)	. PAGE 2 OF	
I, TEST TITLE				Z. KSC TEST NUMBER	· .
IU WATER SYSTEM	GN. TEST		. **	V-24391	
10 10 10 10 10 10 10 10 10 10 10 10 10 1				AS-206 & SUBS	
VAB	14. COMPUTER PROC. INDENTI-	FICATION		18. EST. TEST TIME 2 MEN - 4 HOUR	S
16. SUPPORT REQUIREMEN	<u> </u>			1	
INTERSTAGE:	N/A	er jaka ka			
					la de la
OFF-COMPLEX:	N/A		٠.		•
ON-COMPLEX:	IBM QA		•		
	IBM VEHICLE NETWORKS				
	HP GAS IBM MECHANICAL			•	
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<u> </u>	<u> Altania di Labari</u>	<u> </u>	<u> </u>	<u>Library Caragoni</u>	
MSFC-MAN-014 MSFC-SPEC-164	EFERENCE DOCUMENTATION V-26549				
MSFC-SPEC-164	V=20349 TM=011=001=2	મ આ જાજારી	eir 🖭		
7921601					
18. ITEM CONTINUATION	······································				
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18. ITEM CONTINUATION			ygy Hi		
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		OPERATIONS ND OPERATIONS CATALOG SHEE	PAGE 1 OF 2
I. YEST T	TITLE		2. KSC TEST NUMBER
	THE PART OF THE PA	NOTATION CATION N	V-24392
INS	SPECTION - DEVELOPMENT E	NGINEERING - SATURN V	5. EFFECTIVITY 508 & Subs
			308 Q 300S
THE C STAGE SEALS OF TO	E, VERIFY THE ELECTRICAL	. INTEGRITY OF THE STAGE BY C	GRITY OF THE STAGE AND INTER- ONFIRMING CONNECTOR INTEGRITY THE INTEGRITY AND CONDITION THE NATURE AND EXTENT OF ANY
S. TEST	CESCRIPTION EQUIPMENT STATUS	CONFIGURATION	
		NOT CONTAIN HAZARDOUS OPERATION	ons.
	FOLLOWING ARE DESCRIBED		
int i	FULLUWING ARE DESCRIBED	IN THE PROCESORS:	
1.	STRUCTURAL/MECHANICAL		* .*
	(4) VISUAL INSPECTION O	OF LH2 TANK EXTERIOR.	
	(2) THETHY INSPECTION (THE INTERIOR AND EXTERIOR	OF THE FORWARD SKIRT, AFT
	SKIRT, THRUST STRUC	TURE, AFT INTERSTAGE, AND ST	AGE PROTUBERANCES.
	(C) X-RAYING THE JUNCTI	ON OF THE FORWARD SKIRT-FORM	ARD DOME TO DETERMINE THE
	PRESENCE OF DEBRIS	AND ITS DAMAGE POTENTIAL.	O- WARRY ATTER TOTAL THE TATERTH ATTER
	(D) X-RAYING THE JUNCTU	JRE OF THE THRUST STRUCTURE-I	O2 TANK AFT DOME TO DETERMINE
	THE PRESENCE OF DEP	BRIS AND ITS DAMAGE POTENTIAL ED SUPPORTS IS MADE UPON RECE	TOT DDIOD TO ODDNANCE
	(E) INSPECTION OF BONDE	TER CRYOGENIC LOADING TO VEH	TEV ROND INTEGRITY
	TYPIATIATION WIN WE	TER CRIMENIC DOMNING TO VER	dir bom minomir
2.	PROPULSION		•
	(A) VISUAL INSPECTION C	F ALL FLARED TUBE FITTINGS F	OR TORQUE STRIPING.
	(B) INSPECTION OF ALL I	OW PRESSURE PROPELLANT DUCTS	, VENT DUCTS, AND THE J-2
	ENGINE FOR DENTS AN		
3. 1	ELECTRICAL		
	(A) VISUAL INSPECTION C	OF ALL STAGE CONNECTORS UPON	ARRIVAL AT KSC TO VERIFY
	COMPLIANCE WITH QUA	LITY INSPECTION INTEGRITY SE	ALS.
	(B) DISCURRECTION, VERI	FY AGAINST ACCEPTABLE STANDA N ALL CONNECTORS WITHOUT PRO	RDS, RECONNECTION, AND ADDITION
	OF INTEGRAL C	A ALL CONNECTORS WITHOUT PRO	TER INIEURITI SEALS.
ín	ONTINUED ON PAGE 2)		TECT DECLIPEMENTS
įυ	Unitinged on thee ej		EST REQUIREMENTS SFC: TR 1B76996, Para.
		P	0.2.3.3.1.2
			0.2.1.1.3.0
С	3/18/71 Revised KSC Te	st No. V-24392, was O-V-24392	11 10.4.6.71
			17711 11 19 100
-		SCRIPTION & TEST REQUIREMENTS	15-UGunglial Intallar
В	I TOURS OF BOOK	ER FORMAT AND REVISE SUPPORT	
	GPDATE TO PROPE		
A.	6-10-69 RECUIREMENTS	,	
.A	6-10-69 RECUIRENENTS	REASON	Contractor Approval KSC Approva
A REV.	6-j0-69 RECUIRMENTS DATE RACTOR APPROVAL	REASON B. ORGANIZATION	Contractor Approval KSC Approval
A REV.	6-10-69 RECUIRENENTS	REASON	Contractor Approval KSC Approva
A	6-j0-69 RECUIRMENTS DATE RACTOR APPROVAL	REASON B. ORGANIZATION	9. DATE
A 5 REV. 7 CONT. /S/	6-10-69 RECHISPENTS DATE RACTOR APPROVAL M. J. PLOMER	REASON B. ORGANIZATION MDAC	Contractor Approval KSC Approval 9. DATE April 17, 1969

APOLLO/SATURN TEST AND OPERATIONS CATALOG (SHEET 2)	PAGE OF
1. TEST TITLE	2. KSC TEST NUMBER
	V-24392
INSPECTION - DEVELOPMENT ENGINEERING - SATURN V	S. EFPECTIVITY
•	508 & Subs
13. LOCATION 14. COMPUTER PROC. INDENTIFICATION	16. EST. TEST TIME
VAB, LC 39 N/A	30 Shifts

16. SUPPORT REQUIREMENTS

RD 40091-1Q

17. OTHER APPLICABLE REFERENCE DOCUMENTATION

MDAC DRAWING 1B62281 V-29053, O-V-24087, V-24079

18. ITEM CONTINUATION

- 5: TEST DESCRIPTION/EQUIPMENT STATUS/CONFIGURATION (CONTINUED)
 - (C) VERIFICATION OF CORRECT PART NUMBERS AND SERIAL NUMBERS OF SELECTED COMPONENTS.

THE FOLLOWING EQUIPMENT STATUS/CONFIGURATION MUST EXIST:

 ACCESS TO FORWARD SKIRT, AFT SKIRT, AFT INTERSTAGE; EXTERNAL TANKAGE, J-2 ENGINE, AND TUNNELS. APOLLO/SATURN TEST AND OPERATIONS CATALOG SHEET

1 TEST TITLE
1U/SIVB TCS FILL

KSC OPERATIONS CATALOG SHEET

2. KSC TEST NUMBER
V-24407
3. EFFECTIVITY
AS-206 & SUBS

A TEST OBJECTIVES

FILL THE IU/SIVB THERMAL CONDITIONING SYSTEM (TCS) WITH COOLANT.

TEST DESCRIPTION COULPMENT STATUS CONFIGURATION

THIS TEST DOES DOES NOT CONTAIN HAZARDOUS OPERATIONS.

- 1. THE TCS IS FILLED WITH COOLANT.
- 2. A LEAK OFECK IS PERFORMED ON INITIAL FILL.
- 3. AN AIR ENTRAINMENT IS PERFORMED TO DETERMINE THE PERCENTAGE OF ENTRAPPED GAS.
- 4. THE TOS ACCUMULATOR BLADDER IS POSITIONED TO ALLOW SPECIFIED RESERVE.

CONFIGURATION: VEHICLE ASSEMBLED .

TEST PEQUIREMENTS

MSFC: 7921601 TM-011-001-2H B.1.7.1.2

0.3.5.2.6.1.3.1

PHASE: 11, 111, IV, V, VI

8-6-4	REVISED BLOCKS	3, 5 & 17		D. X. Riley	Behing
9-18-2	REVISED BLOCKS	3, 4, 5, 16 & 17		G.E. LECKIE	P. SCHMID
4-19-7 2	REVISED BLOCKS	3, 5, & 17		G.E. LECKIE	P. SCHMID
8-20-0	UPDATE MSFC REC	UIREMENTS	i sego	G.E. LECKIE	P. SCHMID
6-0-70	I POINTE MSEC REC	XUIREMENTS REF RSCC 53		D.E. SCHMIDT	P. SCHMID
	0.3212 7.37 0.312	REASON		Contractor Approval	KSC Approval
	ROVAL	B. ORGANIZATION	. 9	DATE	
		IBM - K73		MARCH 31, 1970	
KSC APPAO	VAL		. 22.00	Z. APPROVAL DATE	
WIL W. SC	HMID.	LV-MEC-25	in a processor	MARCH 31, 1970	1 1
	9-18-2 4-19-72 8-20-0 6-9-73 0ATE PACTOR APP E. SCHMI	8-6-4 PEVISED BLOCKS 9-18-2 REVISED BLOCKS 4-19-72 REVISED BLOCKS 8-20-0 UPDATE MSFC REC 6-9-70 UPDATE MSFC REC	8-6-4 REVISED BLOCKS 3, 5 & 17 9-18-2 REVISED BLOCKS 3, 4, 5, 16 & 17 4-19-72 REVISED BLOCKS 3, 5, & 17 8-20-0 UPDATE MSFC REQUIREMENTS 6-9-70 UPDATE MSFC REQUIREMENTS REF RSCC 53 DATE REASON 8. ORGANIZATION E. SCHMIDT IBM - K73 11. ORGANIZATION	8-6-4 REVISED BLOCKS 3, 5 & 17 9-18-2 REVISED BLOCKS 3, 4, 5, 16 & 17 4-19-72 REVISED BLOCKS 3, 5, & 17 8-20-0 UPDATE MSFC REQUIREMENTS 6-9-70 UPDATE MSFC REQUIREMENTS REF RSCC 53 DATE REASON 8-ACTER APPROVAL B. ORGANIZATION 9 SCHMIDT IBM - K73	8-6-4 REVISED BLOCKS 3, 5 & 17 9-18-2 REVISED BLOCKS 3, 4, 5, 16 & 17 G.E. LECKIE 4-19-72 REVISED BLOCKS 3, 5, & 17 G.E. LECKIE 8-20-0 UPDATE MSFC REQUIREMENTS G.E. LECKIE 6-9-70 UPDATE MSFC REQUIREMENTS REF RSCC 53 D.E. SCHMIDT DATE REASON Contractor Approval 8. DRGANIZATION PARCH 31, 1970 MARCH 31, 1970 MARCH 31, 1970 MARCH 31, 1970 MARCH 31, 1970

APOLLO/SAT	URN TEST AND OPERATIONS CATALOG (SHEET 2)	PAGE 2
TEST TITLE		2. NOC TEST NUMBER V-24407 3. EFFECTIVITY AS-206 8. SUBS
VAB, LC 39A, B	14. COMPUTER PROC. INDENTIFICATION N/A	3 MEN - 8 HOURS
6 SUPPORT REQUIREMENT	TS SIVE MECHANICAL (NOT APPLICABLE TO AS-	513 & AS-515)
OFF-COMPLEX:	N/A	
ON-COMPLEX:	IU VEHICLE NETWORKS GROUND POWER HP GAS	

17 OTHER APPLICABLE REFERENCE DOCUMENTATION
20Z42200 MSFC-MAN-008 7921601
20Z42212 MSFC-MAN-036 TM-011-001-2H
MSFC-MAN-014 13M50099 10Z22204

18. ITEM CONTINUATION

APOLLO/SATURM TE	KSC OPERATIONS	CATALOG	SHEET	PAGEOF .	2
1. TEST TITLE	DO TO DOCK TROUTING	111		2. KSC TEST NUMBER V-24408	
AIR ENTRAINMENT AND ELA	UJER PUSTITIONING			AS-206 & SUBS	

DETERMINE THE IU/SIVE THERMAL CONDITIONING SYSTEM LEAKAGE RATE AND THE PERCENTAGE OF VOIDS IN THE SYSTEM, AS COMPARED TO ALLOWABLE PERCENTAGE OF VOIDS.

THIS TEST DOES TODES NOT CONTAIN HAZARDOUS OPERATIONS.

- 1. INSTALL THE YOU'RE CHECK TOOL (STANDPIPE) FILLED TO A KNOWN AMOUNT OF COOLANT.
- 2. DETERMINE THE TOS VOID SIZE.
- 3. FILL TOS TO PROPER LEVEL.
- 4. CALCULATE PERCENTAGE OF VOID AND LEAK RATE.

CONFIGURATION: VEHICLE STACKED

TEST REQUIREMENTS

MSFC: 7921501

0.3.5.2.6.1.3.1 0.3.5.2.6.1.3.2 TH-011-001-2H B.1.7.1.2 /

PHASE: III, IV, V, VI

D	8-6-4	REVISED BLOCKS	5-3, 5 & 17	DX- Sailey	Jal Bl.		
C	9-13-2	REVISED BLOCKS 3, 4, 5 & 17			G.E. LECKIE	P. SCHMID	
· 8	4-19-2	REVISED SLOCKS 3, 5 & 17			G.E. LECKIE	P. SCHMID	
Ä	6-9-70	UPDATE MSFC RE	QUIREMENTS REF RSCC	53	D.E. SCHMIDT	P. SCHMID	
4 251	DATE		REASON		Contractor Approval	KSC Approval	
1	HASTSH APP .E. SCHAI		1		MARCH 31, 1970		
S/ P.W. SOMID					12 APPROVAL DATE MARCH 31, 1970		

AIR ENTRAINMENT AND BLADDER POSITIONING AIR ENTRAINMENT AND BLADDER POSITIONING AS-206 & SUES D. LOCATION B. SUPPORT REQUIREMENTS INTERSTAGE: N/A OFF-COMPLEX: N/A ON-COMPLEX: IBM QA IU VEHICLE NETWORKS GROUND & VEHICLE POWER HP GAS OIS IBM MECHANICAL 7. OTHER APPLICABLE REFERENCE DOCUMENTATION 7919372-1 MSFC-MAN-008 TM-011-001-2H KSC-C-123D MSFC-MAN-036 MSFC-MAN-014 7921601 D. ITEM CONTINUATION	APOLLO/SA	TURN TEST AND OPERATIONS CATALOG (SHE	ET 2)	PAGE	CF _2
AB, LC39A, B 14. COMPUTER PROC. INDENTIFICATION 15. EST, TEST TIME 5 MEN - 2 HOURS 1 INTERSTAGE: N/A OFF-COMPLEX: N/A ON-COMPLEX: IBM QA IU VEHICLE NETWORKS GROUND & VEHICLE POWER HP GAS OIS IBM MECHANICAL 7. OTHER APPLICABLE REFERENCE DOCUMENTATION 7919372-1 MSFC-MAN-008 TM-011-001-2H KSC-C-123D MSFC-MAN-036 MSFC-MAN-014 7921601		AND BLADDER POSITIONING	<u> </u>	V-24403	
INTERSTAGE: N/A OFF-COMPLEX: N/A ON-COMPLEX: IBM QA		14. COMPUTER PROC. INDENTIFICATION	• .	ID. EST. TEST TO	i de E
ON-COMPLEX: IBM QA IU VEHICLE NETWORKS GROUND & VEHICLE POWER HP GAS OIS IBM MECHANICAL 7. OTHER APPLICABLE REFERENCE DOCUMENTATION 7919372-1 MSFC-MAN-008 TM-011-001-2H KSC-C-123D MSFC-MAN-036 MSFC-MAN-014 7921601					
IU VEHICLE NETWORKS GROUND & VEHICLE POWER HP GAS OIS IBM MECHANICAL OTHER APPLICABLE REFERENCE DOCUMENTATION 7919372-1 MSFC-MAN-008 TM-011-001-2H KSC-C-123D MSFC-MAN-036 MSFC-MAN-014 7921601	OFF-COMPLEX:	N/A	•		
IBM MECHANICAL OTHER APPLICABLE REFERENCE DOCUMENTATION 7919372-1 MSFC-MAN-008 TM-011-001-2H KSC-C-123D MSFC-MAN-036 MSFC-MAN-014 7921601	ON-COMPLEX:	IU VEHICLE NETWORKS GROUND & VEHICLE POWER HP GAS			
7919372-1 MSFC-MAN-008 TM-011-001-2H KSC-C-123D MSFC-MAN-036 MSFC-MAN-014 7921601					
. ITEM CONTINUATION	7919372-1 KSC-C-123D	MSFC-MAN-008 TM-011-001-2H MSFC-MAN-036			
	TEM CONTINUATION			***************************************	
				•	* +

KSC CPERATIONS APOLLO SATURN TEST AND OPERATIONS CATALOG SHEET	PAGE 1 OF 2
MIL NAT BOOM INSTALLATION, PEMOVAL AND P/M	V-24422 AS-514 & SUBS
1 Tast 18.5 Tives	

CEFINE SUPPORT REQUIREMENTS

ISTAIL HANDLING INSTRUCTIONS
TOTATION OF EQUIPMENT BOTH IN STORAGE AND INSTALLED
THE INSTALLATION AND REMOVAL TIMES

5. SEFINE PREVENTIVE MAINTENANCE OPERATIONS FOR OAT BOOMS IN STORAGE

TE TENTOSE A ET EN EQUIPMENT STATUS CONFIGURATION

THIS TEST DOGS X EDES NOT CONTAIN HARARDOUS OPERATIONS.

SETTER TO VEHICLE ERECTION, CAT BOOMS WILL BE INSPECTED TO ASSURE THAT THEY ARE COM-FLETE AND PEADY FOR INSTALLATION. A SUPPORT REQUEST WILL BE GENERATED TO TRANSPORT NO PASTALL THE "BOOMS."

LETTER WAS TESTING IS COMPLETE AND AS PART OF THE M/L PREPARATIONS FOR MOVING TO THE FAC, BOOMS WILL BE TAKEN DOWN AND RETURNED TO STORAGE AREA WITH LOOSE ITEMS PROPERLY

DAT SOOMS IN STORAGE WILL RECEIVE PREVENTIVE MAINTENANCE.

PHASE IS, IV

TEST REQUIREMENTS: N/A

- 1								
1	3	- 115 74	REVISED BLOCKS	5 1, 3, 4, 5 AND	17		JUNG 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1.	Villent
	<u>.</u>	1	PEVISED BLOCK			•	Lieku 4/6/78	1 h School
	= 5 .	-4-5	277323 32001	REASON			Contractor Approval	KSC Approvol
1		-4/2° 10 3° 5	-:	S CRSANZATION	-	9	SATE	
	- 1	س در میروند	,	; IEM	⊢K73	į	10-14-70	ľ
	1	74.3		IT OHSANIZATION		12	APPROVAL DATE	
	يمبر	1/1	Land -	LI HEC.	,25		10/16/1	0

1 4801103	ATURN TEST AND OPERATIONS CATALOG (SHEET 2	2)	PAGE -	2_or_2_
	ATORN TEST AND C. EMANGE		2 KSC TEST	
TEST TITLE			V-24422	A A A A A B
1/L OAT BOOM I	NSTALLATION, REMOVAL AND P/M		1 1-514 8	A5-209 & SC
	14 COMPUTER PROC. INDENTIFICATION		IT CST. TES	T TIME
LOCATION	N/A		2 MEN -	4 HOURS
N/L 1, 2				
SUPPORT (ONTRACTOR NIPMENT GROUP NICAL			
JB20141 KSC-STD-S-00	E REFERENCE DOCUMENTATION		: 	
ITEM CONTINUATIO	N			
				•
*				
•				

KSC KSC TIEN TEST AN	OPERATIONS ND OPERATIONS CATALOG SHEET	PAGE 1 OF 2
TEST TITLE		2. KSC TEST NUMBER "
	4 NEDICTORTION	V-24434
GAGE PANEL ASSEMBLY, 1872224	4 VERIFICATION	AS REQUIRED
TEST OBJECTIVES		•
THIS TEST PROVIDES FUNCTIONS AND CALIBRATION INSTRUCTIONS	AL CHECKOUT INSTRUCTIONS FOR S FOR THOSE UNITS CALIBRATED	ALL 1872224 UNITS BY MDAC.
TEST DESCRIPTION/EQUIPMENT STATUS/	CONFIGURATION	
THIS TEST TODES DOES	NOT CONTAIN HAZARDOUS OPERATIO	NS.
TEST DESCRIPTION/EQUIPMENT	STATUS	
THIS DOCCEDURE SHALL BE PER	FORMED AS AUTHORIZED BY THE N) AND SHALL PROCEED AS FOLLOW	DAC CALIBRATION RECALL
1. FUNCTIONALLY TEST PRESS	TURE REGULATOR.	
2. LEAK CHECK SYSTEM AT MA		
3. TEST PRESSURE GAGE FOR	ACCURACY.	
<u>CONFIGURATION</u>	e de la companya de l La companya de la co	
LABORATORY TEST		
STANDBY		TEST REQUIREMENT
31/1(05)		MSFC: N/A
S. REV. DATE	REASON	Contractor Approval KSC Approva
7. CONTRACTOR APPROVAL	8. ORGANIZATION	9. DATE
12) holina	MARC	3-30-71
TO NASA-KSCIAPPROVAL 177	11. ORGANIZATION	12. APPROVAL DATE
1137111 -		2/2/2

APOLL	D/SATURN TEST AND OPERATIONS CATALOG (SHEET 2)	PAGE 2 OF 2
I. TEST TITLE		2. KSC TEST NUMBER
CACE DANEL AS	SSEMBLY, 1B72224 VERIFICATION	V-24434
GAGE PANEL AL	SEMBLI, ID/2224 VERIFICATION	AS REQUIRED
3. LOCATION	14. COMPUTER PROC. INDENTIFICATION	IE, EST. TEST TIME
PCOL	N/A	3 HOURS
6. SUPPORT REQUI	REMENTS	
NONE		

17. OTHER APPLICABLE REFERENCE DOCUMENTATION
LVO 220413 GAGE PANEL ASSEMBLY
1B72224 GAGE PANEL ASSEMBLY
1B72363 CMP GAGE PANEL ASSEMBLY DAC P/N 1B72224

18. ITEM CONTINUATION

REPLACES IV-24242

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PEASON Confroster Approval KSC Approval STATE PEASON Confroster Approval KSC Approval 187 - K73 189 - K73 3/16/71	PERATION OF PUMP PRESSURE NOREASING PRESSURE AND CLO ONFIGURATION: VEHICLE STA	SWITCH IS CHECKED BY VERIFY SING ON DECREASING PRESSURE	TEST REQUIREMENTS MSFC: N/A	
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APOLLO/SATURN TEST AND OPERATIONS CATALOG (SHEET 2)		PAGE.	2_or_2_	- ز
TEST TITLE		V-24435		
IU TCS GN2 TEST		3. EFFECTIV	177	-
LC 39/VAB N/A		15 EST. TES	- 12 HOURS	TOTA
6. SUPPORT REQUIREMENTS			12 10010	
RD 40092, 40093				
INTERSTAGE: SIVB MECHANICAL				
OFF-COMPLEX: NONE				
ON-COMPLEX : IBM QA IBM MECHANICAL				
184 MECHANICAL				
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7. OTHER APPLICABLE REFERENCE DOCUMENTATION MSFC-SPEC-164 MC-245	· · · · · · · · · · · · · · · · · · ·		Water the sector than a spirit (Marine	***************************************
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S. ITEM CONTINUATION				
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KSC OPERATIONS APOLLO'SATURN TEST AND OPERATIONS CATALOG SHEET	PAGE 1 OF 2
C TEST TITLE	2. KSC TEST NUMBER V-24436
INSTALLATION, LH2 TANK DOOR, DSV-4B STAGE	3. EFFECTIVITY
	206 & Subs
4. TEST OBJECTIVES	
THE OBJECT OF THIS PROCEDURE IS TO ENSURE PROPER INSTALLATION OF AND TO MAINTAIN SYSTEM CLEANLINESS.	THE LH ₂ TANK DOOR
Min to the critical and a second a second and a second an	
5. TEST DESCRIPTION EQUIPMENT STATUS CONFIGURATION	. IA
THIS TEST TO DOES DOES NOT CONTAIN HAZARDOUS OPERATIONS.	•
PROVIDES DETAILED INSTRUCTIONS FOR INSTALLATION OF LH2 TANK DOOR THAT ALL NECESSARY EQUIPMENT AND MATERIALS ARE AVAILABLE AT STAGIAND THAT LH2 TANK DOOR IS INSTALLED IN PROPER SEQUENCE. PROCEDU	E TO ACCOMPLISH TASK
CLEANLINESS IS MAINTAINED.	And the second of the second o
THE STAGE MAY BE IN EITHER THE VERTICAL OR HORIZONTAL POSITION.	
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TEST REQUI	REMENTS
MSFC: N/A	Α
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A 7-12-72 DELETED TBD IN SUPPORT REQUIREMENTS BLOCK	Wordiel Broken
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APOLLO/SA	TURN TEST AND OPERATIONS CATALOG (SHEET 2)	PAGE 2	or2
INST	ALLATION, LH2 TANK DOOR, DSV-4B STAGE	V-24436	
2.01		206 & Sub	5
IS. LOCATION	14. COMPUTER PROC. INDENTIFICATION	18. EST. TEST T	ME
16. SUPPORT REQUIREMEN	NTS	NAT AND DESCRIPTION OF THE PARTY OF THE PART	
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T OTHER ARRIVES	REFERENCE DOCUMENTATION		
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18. ITEM CONTINUATION			THE RESERVE OF THE PROPERTY OF
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KSC OPERATIONS
APOLLO/SATURN TEST AND OPERATIONS CATALOG SHEET

1. TEST TITLE
O-BALL INSTALLATION AND REMOVAL

8. RECTEST NUMBER
V-24437
9. EFFECTIVITY
AS-206 \$ SUBS

A TEST OBJECTIVES

INSTALLATION AND REMOVAL OF Q-BALL, SHIM, GROUND STRAP AND ATTACHING HARDWARE.

TEST DESCRIPTION EQUIPMENT STATUS CONFIGURATION

THIS TEST IX DOES DOES NOT CONTAIN HAZARDOUS OPERATIONS.

THIS OPERATION IS DIVIDED INTO THREE PARTS:

- 1. Q-BALL PREP FOR INSTALLATION AND GROUND STRAP ATTACHMENT.
- 2. THE SHIM AND Q-BALL ARE INSTALLED ON THE ESCAPE TOWER.
- 3. THE SHIM AND Q-BALL ARE REMOVED FROM THE ESCAPE TOWER.

CONFIGURATION: WEHICLE EPECTED WITH ESCAPE TOWER INSTALLED OR LES HORIZONTAL IN LES STORAGE BUILDING.

PHASE: IV, V OR VI

TEST REQUIREMENTS

MSFC: 7921601 0.3.3.1.2 TM-011-001-2H 8.1.3.1

i					
ε	8-6-74	REVISED. BLOCKS	3, 4, 5 AND 17	1X Rilling	BLI
8	4-19-2	PEVISED BLOCKS	3, 5 AND 17	G.E. LECKIE	P. SCHMID
4	12-20-1	PEVISE BLOCKS	3, 5 AND 15	G.E. LECKIE	P.SCHMID
6 2E1.	DATE		REASON	Contractor Approval	KSC Approval
- :	والأهامي أأراهاه	*****	8 OHGANIZATION	1. DATE	
5/9.	.E. LÉCKI	E	IBM - K73	APRIL 14, 1	971
15 4430	45. ASP 44.	V 4 L	TE ORGANIZATION .	17 APPHOVAL DATE	
S/P/	WL W. SC	HHID	LV-MEC-25	APRIL 14, 1	971

APOLLO SA	TURN TEST AND O	PERATIONS CATALOG	(SHEET 2)		PAGE	2 or 2
Q-BALL INSTALLA	TION AND REMOVAL			www.data.Wolfel.H.	2. KSC TEST V-2443 8. EFFECT:	7
S. LOCATION	14. COMPUTER PROC.	INDENTIFICATION			16. EST. TE	ST TIME
VAB-LC 39A, B,	c	N/A			3 MEN	- 16 HOURS
S SUPPORT REQUIREME RD-40092-3AQ	INTERSTAGE:	NAR				
	OFF-COMPLEX:	NONE				
	ON-COMPLEX:	IBM QA IBM MECHANICAL KSC SAFETY IBM STABILIZER				
	* * * * * * * * * * * * * * * * * * * *	•			* .	
		•				
7 OTHER APPLICABLE						
TM-011-001-2H 10Z12253-17	60C18209 60C18210	50C18259 60C18260				
7 921601	60C18211	60C18261		-		

18. ITEM CONTINUATION

4

29

KSC OPERATIONS APOLLO/SATURM TEST AND OPERATIONS CATALOG SHEET	p, 1 as 2
S-IVB STAGE UNLOADING, POINT BARROW	2. KSC TEST NUMBER V-24442 3. EFFECTIVITY AS REQUIRED
To unload an S-IVB stage and attendant equipment from the Po Canaveral, transfer to NASA barge, unload S-IVB from NASA band move S-IVB into VAB.	oint Barrow at Port arge at VAB dock

TEST DESCRIPTION EQUIPMENT STATUS/CONFIGURATION

THIS TEST X DOES DOES NOT CONTAIN HAZARDOUS OPERATIONS.

15

- 1. Preliminary preparations at Port Canaveral
- 2. Transfer of S-IVB and attendant equipment from Point Barrow to NASA barge.
- Unload NASA barge and transport S-IVB and attendant equipment to VAB low bay area.

Equipment Status/Configuration

SC FORM 23 538 17/871

- 1. A clear area for mooring Point Barrow and NASA barge at Port Canaveral.
- 2. A clear area for mooring NASA barge at VAB dock.
- 3. A clear area on VAB dock for washing stage covers with fresh water.
- 4. Clear area in VAB low bay transfer aisle for S-IVB stage/transporter.

TEST REQUIREMENTS

MSFC N/A

Λ	7-11-72	Added NU for Sa	iturn IB; Changed Effectivit	ty to	RO Ecolis	Von Low
I. REV.	DATE		REASON		Contractor Approval	KSC Approval
	RACTOR APP	11/20/11 fresh	B. ORGANIZATION	,	11/20/7	
	Lifeth.		11 ORGANIZATION L1 - 17/5 C - 3 4	"	2. APPROVAL DATE	

APOLLO SATURN TEST AND OPERATIONS CATALOG (SHEET 2) R. KSC TEST NUMBER ST TITLE V-24442 S-IVB STAGE UNLOADING, POINT BARROW S. EFFECTIVITY AS REQUIRED 15. EST. TEST TIME 14. COMPUTER PROC. INDENTIFICATION 13. LOCATION 16 hours 16. SUPPORT REQUIREMENTS RD 40090 - 2AA SID-24442-D 17. OTHER APPLICABLE REFERENCE DOCUMENTATION MDAC Dwg 1B38090, 1B38091, 0-I-24118-S-IVB This TCS supersedes IV-24248 18 ITEM CONTINUATION

APOLLO/SAT	KSC OPERATIONS FURN TEST AND OPERATIONS CATALOG SHEET	PAUE 1 01 2
TEST TATLE		2. KBC TEST NUMBER
PREPARATION OF I	U PRIOR TO HYPERGOLIC LOADING	V-24443
		AS-206 & SUBS
TEST DESCRIPTION CONTROL THIS TEST DESCRIPTION CONTROL THIS PROCEDURE POR THIS PORT THIS PROCEDURE POR THIS PORT THIS PROCEDURE POR THIS PORT TH	IPMENT STATUS CONFIGURATION (X) DOES NOT CONTAIN HAZARDOUS OPERATION. ROVIDES FOR THE INSTALLATION AND REMOVAL (IC SPILL PROTECTIVE CABLE TRAY COVERS, CUI S, FASTENERS, OPENINGS, ETC. SEALING WITH	S. DF: RTAINS & TUNNEL
CHACC+ TTT TES		
PHASE: III, IV,	크림(1) 14 (1) 14 (1) 14 (1) 15 (1) 16 (1) 16 (1) 16 (1) 16 (1) 16 (1) 16 (1) 16 (1) 16 (1) 16 (1) 16 (1) 16 (1)	
	V, VI TEST REQUIREMENTS TM-011-001-2H	
	TEST REQUIREMENTS	
MSFC:	TEST REQUIREMENTS TM-011-001-2H	D& aley Alle
8 8-6-4 PEV	TEST REQUIREMENTS TM-011-001-2H B.6.0.1	August and an area of the second of the seco
B 8-6-4 PEV A 4-19-72 REV PEV. DATE	TEST REQUIREMENTS TM-011-001-2H	G.E. LECKIE P.W. SCH
8 8-6-4 PEV A 4-19-72 REV PEY DATE CONTRACTOR APPROVAL	TEST REQUIREMENTS TM-011-001-2H B.6.0.1 / ISED BLOCKS 3, 5 AND 17 ISED BLOCKS 3, 5, 16 AND 17 REAJON B ORGANIZATION	G.E. LECKIE P.W. SCH Contractor Approval KSC Approva
B 8-6-4 PEV A 4-19-72 REV PEV. DATE	TEST REQUIREMENTS TM-011-001-2H	G.E. LECKIE P.W. SCH

APOLLO SA	TURN TEST AND OF	LENATIONS CATAL	.06 (SHEET 2)		PAGE.	2_or_	2
PREPARATION OF	IU PRIOR TO HYPE	RGOLIC LOADING	,		2 KSC TEST V-24443 3 EFFECTIV AS-206	ITY	
LC-39A, B, C	14. COMPUTER PROC.	N/A	ļ		18 EST. TES	TIME	FACU
6. SUPPORT REQUIREME	NTS	11/7			7.76.14	o nouns	EACT
INTERSTAGE:	N/A						
OFF-COMPLEX:	N/A						
ON-COMPLEX:	IBM QA IBM MECHANICAL IBM VEHICLE NE						

OTHER APPLICABLE 1 V-26549 7916195 7915900-1	REFERENCE DOCUMENT TM-011-001-2H	ATION					
ITEM CONTINUATION							
			erin hay si Salaya ka saja				
		i Marajanja			18 18 N		
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	A CONTRACTOR						
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pitati (maga).				•			
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ar ar ghan an a				l Like		seleci :	
	ywa sechia	u karing bilan					
	er er gemenner til frå brygger i hade. Gregoria						
				1. 6.00			

KSC OPERATIONS PAGE _ 1 _ OF _ 2 APOLLO SATURN TEST AND OPERATIONS CATALOG SHEET 1 TEST TITLE KSC TEST NUMBER V-24444 STAGE LOADING, DSV-4B, AIR CARRIER - KSC 3. EFFECTIVITY As Required A TEST OBJECTIVES THIS PROCEDURE DESCRIBES THE STEPS REQUIRED TO TRANSFER THE S-IVB STAGE FROM MODEL DSV-4B-300 TRANSPORTER TO CLT AND SUBSEQUENT LOADING INTO THE SUPER GUPPY. S TEST DESCRIPTION EQUIPMENT STATUS CONFIGURATION THIS TEST X DOES DOES NOT CONTAIN HAZARDOUS OPERATIONS. THE FOLLOWING OPERATIONS ARE INCLUDING IN THIS DRAWING: 1. PRELIMINARY OPERATIONS (ALIGNMENT OF TRANSPORTER TO CLT) 2. STAGE TRANSFER FROM TRANSPORTER TO CLT 3. PREPARATION OF SUPER CUPPY TO RECEIVE STAGE 4. ALIGNMENT OF CLT TO SUPER GUPPY 5. TRANSFER OF STAGE FROM CLT TO SUPER GUPPY 6. INSTALLATION OF SUPER GUPPY TIE-DOWNS TO STAGE 7. STAGE SECURITY CHECK THE FOLLOWING EQUIPMENT STATUS MUST BE IN EFFECT: 1. VERIFICATION OF CLT PROOF-LOAD TO DAC REQUIREMENTS 2. SUPER GUPPY PROPERLY POSITIONED AT SKID STRIP TO DAC REQUIREMENTS NOTE: THIS PROCEDURE IS NOT SCHEDULED OR PLANNED AND WILL BE RELEASED ON AN "AS REQUIRED" BASIS. CONFIGURATION: SUPER GUPPY LANDED AT SKID STRIP AND STAGE IN CONFIGURATION TO BE LOADED. TEST REQUIREMENTS MSFC: N/A A | 6-14-72 Added RD for Saturn IB DATE REASON 8 ORGANIZATION 9. DATE McDonnell Douglas 5-4-71 11. ORGANIZATION 12. APPROVAL DATE LV-MEC-24

		ERATIONS CATALOG (SH	HEFT 2)	PAGE	2 of 2
Č	TURN TEST AND OP	ERATIONS CATALOG (SA	1661 21	2. KSC TEST	
TEST TITLE				V-244	և և
STAGE LOADING, DE	SV-4B, AIR CARRI	ER - KSC		S. EFFECTI	VITY
,	· · · · · · · · · · · · · · · · · · ·			As Req	pired
LOCATION	14. COMPUTER PROC. I	INDENTIFICATION		20 hou	
SKID STRIP	N/A				A 3-7
S. SUPPORT REQUIREMEN	112				
אר וייסטט או					
RD 40090-2M RD 21440					
	li .				
		'			
7. OTHER APPLICABLE	REFERENCE DOCUMENT	ATION			
DAC DWG 1B62328	יישדפ יירפ פווף	ERSEDES 0-IV-24223			
DAG DWG IBO2320	INIS ICS DOLL				
S. ITEM CONTINUATION					
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program and the state of the st	guille, plates agains			من جوارد داد. مالد داد داد داد داد داد داد داد داد داد	
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The state of the s					Marketing of white the set
in many street					

KSC OPERATIONS
APOLLO/SATURN TEST AND OPERATIONS CATALOG SHEET PAGE 1 OF 2 TEST TITLE KAC TEST NUMBER V-24445 IU WATER ACCUMULATOR FILL S. EPPECTIVITY AS-206 & SUBS

A TEST OBJECTIVES

TO FILL IU WATER ACCUMULATOR

5 TEST CESCAIPTION EQU.PMENT STATUS CONFIGURATION

THIS TEST . DOES Y DOES NOT CONTAIN HAZARDOUS OPERATIONS.

THIS TEST DESCRIBES TWO METHODS FOR FILLING WATER ACCUMULATOR.

METHOD I: THE WATER ACCUMULATOR IS FILLED USING WATER ACCUMULATOR SERVICING ASSEMBLY CART. THE CART SUPPLY RESERVOIR IS FILLED WITH DEMINERALIZED

WATER WHICH IS THEN TRANSFERRED TO IU WATER ACCUMULATOR.

METHOD II: THE WATER IS TRANSFERRED FROM PLASTIC CONTAINERS TO IU WATER ACCUMULATOR.

TCS & GES GN SYSTEMS ARE LEAK TESTED AT PREFLIGHT CHECKOUT PRESSURE FOLLOWING ACCUMULATOR FILL.

IN BOTH METHODS, THE QUANTITY OF WATER TRANSFERRED TO ACCUMULATOR IS MEASURED TO VERIFY 144 POULDS MINIMUM IS IN ACCUMULATOR.

CONFIGURATION: VEHICLE STACKED

PHASE: VI

TEST REQUIREMENTS

MSFC: 7921601 0.3.5.2.6.2.1.1 0.3.5.2.6.2.1.2 0.3.5.2.6.2.1.3 0.3.5.2.6.2.2 0.3.5.2.1.3 0.3.5.2.6.2.1 TM-011-001-2H B.4.0.1

3	8-€-74	₩EVISED BLOCKS	3, 5 AND 17	D. x. Pilmy	Milling
A	19-72	REVISED BLOCKS	3, 5, 16 AND 17	G.E. LECKIE	P. SCHMID
4 =E /	DATE		REASON	Contractor Approval	KSC Approval
	E. LECKI		1BM - K73	MAY 7, 1971	
	UL W. SC		LY-MEC-25	MAY 5, 1971	

APOLLO/SATURN TEST AND OPERATIONS CATALOG (SHEET 2) 1. TEST TITLE KSC TEST NUMBER V-24445 IU WATER ACCUMULATOR FILL . EFFECTIVITY AS-206 & SUBS 14. COMPUTER PROC. INDENTIFICATION S. EST. TEST TIME LC-39A, B, C 2 MEN - 4 HOURS EACH 16. SUPPORT REQUIREMENTS INTERSTAGE: OFF-COMPLEX: N/A ON-COMPLEX: IBM QA IBM MECHANICAL IBM VEHICLE NETWORKS 7. OTHER APPLICABLE REFERENCE DOCUMENTATION MSFC-MAN-038 20Z42212 MSFC-SPEC-164 7921601 MS33540 TM-011-001-2H 18. ITEM CONTINUATION

KSC OPERATIONS PAGE _ 1 OF _ 2 APOLLO SATURN TEST AND OPERATIONS CATALOG SHEET V-24497 INSPECTION AND CORROSION CONTROL OF S-IB STAGE EFFECTIVITY . . 286 & SUBS

4 TEST GBJECTIVES

TO INSPECT S-IB STAGE FOR CORROSION

S "EST DESCRIPTION EQUIPMENT STATUS CONFIGURATION

THIS TEST DOES XX DOES NOT CONTAIN HAZARDOUS OPERATIONS.

THIS PROCEDURE COVERS THE PERIODIC GENERAL CORROSION AND STRESS CORROSION CRACK INSPECTIONS OF THE 5-18 VEHICLE.

I - INITIAL AND QUARTERLY CRACK INSPECTIONS OF MAJOR

STRUCTURAL PARTS

PART II - MONTHLY CRACK INSPECTIONS OF CRITICAL STRUCTURAL PARTS

PART III - FORTHIGHTLY CRACK INSPECTION OF CRITICAL STRUCTURAL PARTS.

PART IV - 48 HOUR CRACK INSPECTION OF CRITICAL STRUCTURAL PARTS WITH

HIGH SUSTAINED STRESS.

V - H-1 ENGINE CORROSION INSPECTION

PART VI - INITIAL AND QUARTERLY GENERAL CORROSION INSPECTION

PART VII - MONTHLY GENERAL CORROSION INSPECTION

PARTVIII - ITEMS FOUND TO HAVE CORROSION SHALL BE CLEANED AND RE-

PAIRED BY AN ACCEPTABLE METHOD OR REPLACED BY ACCEPTABLE SPARES.

PHASE N/A

TEST REQUIREMENTS SEE ITEM 18

TEST REQUIREMENT CHANGES 3/3/74 Hewal 5/7/74 TO ADD DOCUMENTATION REQUIREMENTS JVW. Rathjen R K Yamasaki R. Newall 12/5/72 CHANGE TITLE AND EFFECTIVITY K. Yamasaki R. Newal ADD TEST REQUIREMENT 3.4.0.1.7 9/13/72 Contractor Approval KSC Approvel 6. REV. DATE REASON 9. DATE 7 CONTRACTOR APPROVAL 8 OFGANIZATION 12/14/71 CCSD R. W. Eddy 12. APPROVAL DATE 16. MASA-KSC APPROVAL I. GRGANIZATION R. Newall 12/15/71 LV-MEC-23

43C #CPU 32-836 (7/67)

APOLLO SATURN TEST AND OPERATIONS CATALOG (SHEET 2)	PACE 2 OF 2
INSPECTION AND CORROSION CONTROL OF S-IB STAGE	V-24497 > EFFECTION V 206 & SUBS
13. LOCATION 14. COMPUTER PROC. INDENTIFICATION VAB OR PAD 11/A	24 HOURS

AIRBORNE NETWORKS AIRBORNE MEASURING

7. OTHER APPLICABLE REFERENCE DOCUMENTATION DRAWING 60C06033, 60C16037 TEST AND CHECKOUT REQUIREMENTS, SPECIFICATIONS AND CRITERIA FOR USE AT

18. ITEM CONTINUATION

TEST REQUIREMENTS:

3.4.0.1.1 3.4.0.1.2 3.4.0.1.3 3.4.0.1.5

3.4.0.1.6 3.4.0.1.7

⇒3.3.5.24.1 THRU 3.3.5.24.8

	KSC OPERATIONS APOLLO/SATURN TEST AND OPERATIONS CATALO	G SHEET	PAGE 1 OF 2
Į	EST TITLE		V-24498
	REMOVAL OF ENVIRONMENTAL PROTECTION EQUIPMENT		206 AND SUBS

A TEST OBJECTIVES

REMOVAL ENVIRONMENTAL PROTECTION AND PREPARE STAGE FOR PRELAUNCH CHECKOUT.

TEST DESCRIPTION EQUIPMENT STATUS CONFIGURATION

THIS TEST TO DOES TO DOES NOT CONTAIN HAZARDOUS OPERATIONS.

THE FOLLOWING VEHICLE ACCESS POINTS WILL BE OPENED:

- A. CANISTERS 12 AND 13.
- B. SEAL PLATES AS REQUIRED.
- C. FUEL TANKS 3 AND 4 COVERS FORWARD SECTION.
- D. FUEL AND LOX BAY DOORS AFT SECTION.
- E. HEAT SHIELD PANELS AS REQUIRED.
- CENTER BARREL.

HARD BELLONS COVERS WILL BE REMOVED AND REPLACED WITH SOFT COVERS. FELT COVERS ARE TO BE PLACED ON ALL FORMARD FUEL AND LOX TANK BULKHEADS. LOX AND FUEL TANK BREATHERS ARE TO BE CHANGED AS THE MOISTURE MONITORS INDICATE A SATURATED CONDITION. WORK LIGHTS WILL BE INSTALLED AS REQUIRED. THE FUEL TANK LATERAL RESTRAINING HARDWARE IS REMOVED.

SPECIAL TEST EQUIPMENT REQUIRED INCLUDES:

- A. SOFT BELLOWS COVERS.
- B. TAMK BULKHEAD FELT COVERS.
- C. DRY LOX AND FUEL TANK BREATHER ASSEMBLIES.
-). SOFT ZIPPER DOORS.
- E. WORK LIGHTS.

CONFIGURATION - VERTICAL POSITION

TEST REQUIREMENTS
1) 3.4.0.1.8

PHASE 1A % II

A 10/13/72 REQUI	TREMENT IS PROVIDED BY PREPS FOR CH V-24522	CODT AND EN LOCAL PROPERTY
A. REY. DATE	REASON	Contractor Approval KSC Approval
K. Wintellike	6 OFFICE CCSD	14 DEC. 1471
R Mera C	LV MLC 23	3 12/14/71

APOLLO S	ATURN TEST AND OPERATIONS CATALOG (SHE	ET 2)	PAGE OF	2	
PENGUAL OF FAMILIONAL PROTECTION FOLITOMENT			2. KSC TEST NUMBER V-24498		
REMOVAL OF ENVI	REMOVAL OF ENVIRONMENTAL PROTECTION EQUIPMENT		206 AND SUBS		
VAB AND PAD	14 COMPUTER PROC. INDENTIFICATION		18. EST. TEST TIME 32 HOURS		
16 SUPPORT REQUIREM	ENTS				
NONE					
· ±		•			
17 OTHER APPLICABLE 60C11001 60C11018 60C21318	REFERENCE DOCUMENTATION 60C21319 CHECK LIST NONFLIGHT REMOVABLE	ITEMS			
SUCZ 1318			:		

TEST OBJECTIVES

- 1) PERFORM FUNCTIONAL CHECK OF 750 PSI REGULATOR, RELIEF VALVE, AND SYSTEM SOLENOID VALVES.
- 2) PERFORM LEAK CHECK OF ALL CONTROL LINES, CONNECTIONS, AND COMPONENTS IN THE GN2 CONTROL SYSTEM AND CALORIMETER PURGE SYSTEM.

S TEST DESCRIPTION EQUIPMENT STATUS CONFIGURATION

THIS TEST Y DOES

DOES NOT CONTAIN HAZARDOUS OPERATIONS.

THE SN2 CONTROL SPHERE IS PRESSURIZED TO 100 PSIG AND THE FILL AND VENT VALVE IS CYCLED RAPIDLY TO VERIFY OPERATION OF THE VENT. THE CONTROL SPHERE IS THEN PRESSURIZED TO 2000 PSIG IN 500 PSIG INCREMENTS. THE SPHERE AND ALL ASSOCIATED LINES AND CONNEC-TIONS ARE LEAKCHECKED FOR EXTERNAL LEAKAGE. THE SEAT LEAKAGE OF THE SUPPLY SOLENOID AND OF THE FILL AND VENT VALVE ARE CHECKED. THE CONTROL PRESSURE REGULATOR IS INCREASED TO 750 PSIG AND FUNCTIONALLY CHECKED. THE 750 PSIG MANIFOLD AND ASSOCIATED CONTROL LINES ARE LEAKCHECKED. A MEAKCHECK OF ALL PREVALVE CONTROL PISTONS LEAKAGE AND PREVALVE CONTROL VALVE SEAT LEAKAGE IS PERFORMED WITH VEHICLE AND GROUND 750 PSIG. THE CALORIMETER PURGE CONTROL VALVE SEAT AND ALL CALORIMETER PURGE SYSTEM LINES AND CONNECTIONS ARE LEAKCHECKED. THE 750 PSIG RELIEF VALVE CRACKING PRESSURE AND RESEAT. PRESSURE IS CHECKED.

VEHICLE CONFIGURATION - VERTICAL POSITION

THE TEST SHALL BE PERFORMED WITH VEHICLE AND GROUND POWER APPLIED AND ALL VALVES IN FLIGHT CONFIGURATION.

SEE TEST PEQUIREMENTS ON CTHER SIDE.

MEE FORM 23-338 (7/67)

		1	To add preval	ve timing requ	irement.	Gulati mx4.	19 Third
		16/7/74	O PERLECT CHA	NGE THE HISEC TEST	REQUIREMENTS	- 	11/10-11
	ם	8/7/73		MGE 18 HSFC TEST PU 3.3.6.2.3.5		21730000	12/2 Carrell
. 7	C	1/23/73	TO REFLECT COMP 3.3.6.2.2.1.1	PLETE MSFC TEST RI THPOUGH 3:3.6.2.2	.1.2	The Line	Minds
	Ë	9/22/72	DELLIE PARACRAI	Н 3.3.5.10.3		/s/ J. Hoffman	/s/ R. Newal
	ž.	7/28/72	DELETE PARAGRAI	PH 4.3.5.1.1.3	3.	/s/J. Hoffman	/s/R.Newall
	S. PEV.	DATE	1,4% - 1,4% - 1	REASON		Contractor Approval	KSC Approval
		1		8. ORGANIZATION CCSD		9. DATE 9/22/7	71
	10 MAS	R. Newa	AL	LV MEC		12. APPROVAL DATE 10/28/7	71 1

PASC 2 OF 2 APOLLO SATURN TEST AND OPERATIONS CATALOG (SHEET 2) GN2 CONTROL SYSTEM AND CALORIMETER PURGE SYSTEM FUNCTIONAL AND LEAKAGE TEST 2012 AND SUPS 437 - 1431 TIME 14 COMPUTER PROC INDENTIFICATION 12 LOCATION 8 HOURS VAB

16 SUPPORT REQUIREMENTS

- 1) GROUND POWER
- 2) S-IB STAGE POWER
- 3) DDAS
- 4) HIGH PRESSURE GAS
- GSE MECHANICAL

17. OTHER APPLICABLE REFERENCE DOCUMENTATION

TEST AND CHECKOUT REQUIREMENTS, SPECIFICATIONS AND CRITERIA FOR USE AT KSC. 60C06050

IS. ITEM CONTINUATION

(FROM BLOCK 5)

MSFC PRELAUNCH TEST AND CHECKOUT REQUIREMENTS SATISFIED ARE:

15) 3.3.4.1.2

```
3.3.6.2.4
2)
    3.3.6.2.1
                      8)
                           3.3.6.2.5.1
    3.3.6.2.2.1 (ALL)
                      9)
                           3.3.6.2.5.2
    3.3.6.2.2.2
                      10) . 3.3.6.2.6
    3.3.6.2.3.1 (ALL)
                      11) 3.3.5.21.3
    3.3.6.2.3.2
                      12) 3.3.3.1.2.1
                       13) 3.3.3.1.2.2
                       14) 3.3.3.1.2.3
```

KSC OPERATIONS PAGE 1 OF 2 APOLLO SATURN TEST AND OPERATIONS CATALOG SHEET V-24522 S-IB STAGE PREPARATION FOR COUNTDOWN DEMONSTRATION & LAUNCH ي وقيون وفق 206 AND SUBS 4 TEST ORICGTIVES

PPEPAPE THE S-IB STAGE FOR CODT AND LAUNCH

THE SEVEN FE SHEELIRMENT STATUS CONFIGURATION

THIS TEST X DOES NOT CONTAIN HAZARDOUS OPERATIONS.

THIS PROCEDURE IS USED TO SUPPORT THE VEHICLE MECHANICAL OPERATIONS PERTINENT TO WET CODT, DRY CODT AND THE LAUNCH COUNTDOWN.

PART I CONTAINS OPERATIONS TO SUPPORT WET CODT AND LAUNCH COUNTDOWN. MOST OF PART I IS ONE TIME ONLY.

PAPT II CONTAINS OPERATIONS TO SUPPORT WET CODT. PART II CLOSES OUT ONLY THOSE ITEMS PECUIRED TO FOR WET CODT.

PART III CONTAINS OPERATIONS TO RECONFIGURE IN PREPARATION FOR LAUNCH COUNTDOWN.

PART IV CONTAINS OPERATIONS TO SUPPORT THE LAUNCH COUNTDOWN. PART IV CONTAINS THE FINAL CLOSE OUT OF THE VEHICLE FOR LAUNCH.

THIS PPOCEDURE WILL BE ACCOMPLISHED FOR CODT AND LAUNCH.

CONFIGURATION - VEHICLE IN FLIGHT CONFIGURATION.

MSFC REGULREMENTS:

3.3.1.3 3.3.3.1.3

3.4.0.1.4 3.3.3.0.1 (ALL)

7/26/74 ADDITION OF MSEC REQUIREMENT 3 3 3 5/11/73 COMPINE Y-24522 3 Y-24524 2/27/73 ADDITION OF MSEC 3.3.5.13 IN PEOUIREMENTS 11/2-/72 DELETION OF REFERENCES TO SECTION 4.0 11/15/72 ADDITION OF (LV) TROPSRO REQUIREMENTS Mentione il. Fischer R. Newall R. Eddy R. Newall R. Eddy Humphre R. Newall 2/28/72 NON-HAXAPOGUS PEP KMI.1710.13A/SF R. Pugh S PE . DATE Contractor Approval. KSC Approval REASON CONTRACTOR APPROVAL 9 GAGANIZATION SATE 2. Pugh CCSD 9/22/71 S NASA PES APPROVAL SASE .. ZAT ON 12 APPROVAL DATE LV-MEC-23 R. NEWALL 11/12/71

FASE 3 OF 2 ... APOLLO SATURN TEST AND OPERATIONS CATALOG (SHEET 2) is eas tuat number V-24502 *S-IB STAGE PREPARATION FOR COUNTDOWN DEMONSTRATION & LAUNCH 206 & SUES TA COMPUTER CHOC INCENTIFICAT CH 4 HOURS PAD N/A 15 5 PP ; HT HEQUINEMENTS

H.P. GAS GSE MECHANICAL CHEMICAL ANALYSIS LABORATORY S-IB GROUND AND STAGE POWER PAD SAFETY SECURITY POLICE FIRE FIGHTING BACK-UP BATTERIES MEASURING FACILITY COMM. (015) RCA-110A COMPUTERS

17 OTHER APPLICABLE REFERENCE DOCUMENTATION

STAGE TEST AND CHECKOUT BEQUIREMENTS, SPECIFICATIONS AND CRITERIA FOR USE AT KSC. 60006050

18 ITEM CONTINUATION

(OIS) RECORDING

KSC OPERA APOLLO/SATURN TEST AND OP	TIONS ERATIONS CATALOG SI	HEET	PAGE 1 OF 2	<u></u>
PRELAUNCH ELECTRO-MECHANICAL TEST			V-24523	
PRELAUNCH ELECTRU-MECHANICAL TEST		•	206 AND SUBS	

4 TEST OBJECTIVES

VERIFY ALL VEHICLE AND RELATED GROUND ELECTRO-MECHANICAL COMPONENTS ARE FUNCTIONING WITH THE EXCEPTION OF THE FUEL VENTS AND FUEL FILL AND DRAIN VALVE.

S TEST DESCRIPTION EQUIPMENT STATUS CONFIGURATION

THIS TEST TODES TO X DOES NOT CONTAIN HAZARDOUS OPERATIONS.

S-IB STAGE GN2 - CONTROL SYSTEM FUNCTIONAL AND LEAKAGE TEST MUST BE PERFORMED PRIOR TO THIS TEST.

PREPARE S-IB VEHICLE AND GROUND SUPPORT TO PERFORM THIS TEST.

ALL VEHICLE AND RELATED GROUND COMPONENTS ARE VERIFIED TO BE IN FLIGHT CONFIGURATION. THE FOLLOWING ITEMS ARE CHECKED FOR OPERATION:

- CONTROL SPHERES PRESSURIZING AND VENT VALVES
- FUEL SPHERES PRESSURIZING VALVE (3)
- FUEL BUBBLING VALVE
- ENGINE PURGES (G.G. LOX INJ. LOX SYSTEM AND T. C. FUEL INJ.)
- CALCRIMETER PURGE VALVE
- FUEL PRESSURIZING VALVES, FUEL VENT CONTROL VALVE
- LOX VENT VALVES
- LOX RELIEF VALVE
- LOX FILL AND DRAIN VALVE
- LOX BUBBLING VALVE
- LOX PRESSURIZING VALVE
- LOX, ORIFICE BYPASS VALVES
- PREVALVES

SECURE S-IB VEHICLE AND GROUND SUPPORT COMPONENTS.

A PREREQUISITE TO THIS PROCEDURE IS THAT ALL COMPONENTS CHECKED MUST HAVE BEEN PRE-VIOUSLY CHECKED PER THEIR INDIVIDUAL CHECKOUT PROCEDURES.

THIS TEST IS PERFORMED AFTER VEHICLE ERECTION.

1			
B 11/6/72	TITLE CHANGE		J. Glasaf XXXIII
A 2/28/72	NON-HAZARDOUS	PER KMI.1710.13A/SF	Allugh Klient
5 REV. L DATE		REASON	Contractor Approval KSC Approval
FIL FIL	MOVAC,	CCSD	9. DATE 9/22/71
10 NASH KSC APPRO	Gron ell	11. ORGANIZATION LV MIE C. 2-3	12 APPHOVAL DATE 10/2-8/7/

E_2_of ?	
ST NUMBER 523	
AND SUBS	
	MINUTES

- S-IB VEHICLE POWER IS REQUIRED THROUGH THIS TEST.
- S-IB MEASURING
- 2) GSE MECHANICAL
- DEE-6 OPERATION IS REQUIRED
- LOX CONTROL PANEL OPERATOR TO OPERATE THE LOX FILL AND DRAIN VALVE IF 5) POWER IS APPLIED TO THE PROPELLANT LOADING RACKS.
- BACK-UP BATTERIES
- RCA-110A COMPUTERS 7)
 - H. P. GAS

17. OTHER APPLICABLE REFERENCE DOCUMENTATION

18 ITEM CONTINUATION

PHASE VI

TEST REQUIREMENTS: MSFC - N/A

KSC OPERATIONS APOLLO SATURN TEST AND OPERATIONS CATALOG SHEET V-24526 M COMPONENTS PRESSURIZATION EFFECTIVITY 206 AND SUBS A IST SHIEF TIVES

TERIFY/ACCOMPLISH COMPONENTS PRESSURIZED FOR PRE-LAUNCH TESTS AND FLIGHT

S 151 11 SCHIPTION EQUIPMENT STATUS CONFIGURATION

X DOES NOT CONTAIN HAZARDOUS OPERATIONS. HIS TEST ! ! DOES

THE PROCEDURE CONSISTS OF TWO PARTS. THE FIRST PART CHECKS COMPONENT PRESSURE AND THE OTHER PART PRESSURIZES THOSE COMPONENTS AS REQUIRED. "USE OR VOID" BLANKS ARE PROVIDED FOR INDICATING THOSE PORTIONS OF THE PROCEDURE WHICH WILL BE REQUIRED FOR FACH PERFORMANCE.

FART I

COMPONENT PRESSURES ARE CHECKED USING A CALIBRATED TIRE PRESSURE GAGE AND RECORDED OH A DATA SHEET.

I ART II

THE COMPONENTS ARE PRESSURIZED AS REQUIRED, BY CONNECTING A REGULATOR PANEL TO THE COMPONENT SCHRADER VALVE. THE TEST SET-UP IS LEAK CHECKED AND THEN A 10-MINUTE PRESSURE DECAY TEST IS RUN ON THE PRESSURIZED COMPONENT. NO PRESSURE DROP IS ALLOWED. COMPONENTS CAR BE PRESSURIZED WHEN MOUNTED IN VEHICLE OR AS AN INDIVIDUAL COMPONENT:

COMPONENT PRESSURE LIMITS ARE AS FOLLOWS:

CONTAINER ASSEMBLIES: FM/RF ASSEMBLY PCM/RF ASSEMBLY

PRESSURIZATION LIMITS - 6.5 + 0.5 PSIG

TEST REQUIREMENTS:

VEHICLE CONFIGURATION N/A

REASON 8. ORGANIZATION 9/22/71 CCSD II. ORGANIZATION 12. APPROVAL DATE 1 V 1765 2.3

APOLLO SATURN TEST AND OPERATIONS	CATALOG (SHEET 2)	PAGE 2 OF 2
1. TEST TITLE		V-24526
TM COMPONENT PRESSURIZATION		206 AND SUBS
13 LOCATION . 14. COMPUTER PROC. INDENTIFICA	TION	1 HOUR/ITEM

16. SUPPORT REQUIREMENTS

H. P. GAS

7 OTHER APPLICABLE REFERENCE DOCUMENTATION

TEST AND CHECKOUT REQUIREMENTS, SPECIFICATIONS AND CRITERIA FOR USE AT KSC. 60C06050 COMPONENTS PRESSURIZED BY THIS PROCEDURE AND PRESSURE SPECIFICATIONS.

	and the property of the second
KSC.OPERATIONS APOLLO SATURN TEST AND OPERATIONS CATALOG SHEET	PAGE _1 of 2
***************************************	V-24527
-YORAGLIC SYSTEM PURGE AND FILL (STAND BY)	AS REQUIRED
TOTAL THE HYDRAULIC FLUID IN THE ENGINE HYDRAULIC SY FILL THE FLUID RESERVOIR TO THE PROPER LEVEL FOR FLIGHT, IF R	

IN THE TOUTH OF ON EQUIPMENT STAT IS CONFIGURATION

THIS TEST DOES & DOES NOT CONTAIN HAZARDOUS OPERATIONS.

LEPISY THAT THE HYDRAULIC SPOUND SERVICER HAS BEEN PREPARED FOR USE AND NOTIFY FLIGHT CONTROL UNIT FOR SUPPORT. POSITION AND SECURE BOTH ACTUATORS FOR FREE MOVEMENT TO FULL STROKE. UNCAP THE LOW PRESSURE PELIEF VALVE AND ROUTE OVERBOARD. CONNECT THE HYDRAULIC SPOUND SERVICER LOW AND HIGH PRESSURE SYSTEM LINES TO THE ENGINE HYDRAULIC PACKAGE. PRECHARGE THE ENGINE HYDRAULIC ACCUMULATOR WITH GN2 TO 1600+25 PSIG.

THE SYSTEM IS LEAKCHECKED TO VERIFY THAT NO EXTERNAL LEAKAGE EXISTS. THE PRECHARGE IS THEN REDUCED TO 300 PSIS (SO THAT THE GROUND SERVICER PUMP MAY SUPPLY FLUID TO THE ENSINE SYSTEM MORE EASILY) AND THE SYSTEM IS PURGED (CIRCULATED THRU THE FLIGHT AND SPOUND FILTERS). GAS IS BLED FROM THE ENGINE FLUID SYSTEM. FLUID SAMPLES ARE TAKEN THE GROUND SERVICEP AND ENGINE PACKAGE TO ENSURE THE FLUID MEETS CLEANLINESS LESES WHICH ARE ACCEPTABLE FOR FLIGHT. THE PRECHARGE IS THEN RAISED TO 1600+25 PSIG AND THE ENGINE FLUID RESERVOIR IS FILLED TO THE PROPER LEVEL AND THE GROUND SERVICER IS DISSONNESTED FROM THE ENGINE PACKAGE.

NOTIFY SUPPORT GROUPS TO SECURE, REDUCE THE PRECHARGE TO 10-15 PSIG.

THIS TEST IS PERFORMED AFTER VEHICLE ERECTION.

ENGINE HYDRAULIC PACKAGE IS SECURED FOR FLIGHT IN LAUNCH COUNTDOWN.

PHASE N/A

TEST REQUIREMENTS MSFC: 1) 3.1.1.1.1.1 2) 3.1.1.1.1.2

1 2	:5/7/74,	To Add Docume	ntation Requirements	7000000	16 /GENTY
1	11/27/72	DELETION OF P	EFERENCES TO SECTION 4.0	The state of	cix line
1 3	7/12/72	46 425 4845	EC. 1660 TO MSFC SPEC. 1660	TAZY	Called !
Ä	2/22/72	NON-HAZAPOOUS	PER KMI.1710.13A/SF	L. Minnack	Klard
6 REV.	DATE		REASON	Contractor Approval	KSC Approval
7 ::32	11:2	il.	8. ORGANIZATION CCSD	9/22/71	
15. SEASI	R HE	wall	11. ORGANIZATION LV MEC = 3	12. APPROVAL DATE	,

APOLLO SAT	TURN TEST AND OPERATIONS CATALOG (SHEET 2)	PASE_2_CF_2_
1 TEST TITLE	1 495 7557 4 JUDER	
HYDRAULIC SYSTEM PURGE AND FILL (STANDBY)		AS REQUIRED
13 LOCATION	14 COMPUTER PROC INCENTIFICATION	19 C37 "C37 " UF
VAB or PAD.	CAHS	1 16 42005
16 SUPPORT REQUIREMEN	(TS	

S-IB MEASURING

CHEMICAL ANALYSIS LABORATORY

H. P. GAS

3) 4) GROUND AND VEHICLE POWER

5) FLIGHT CONTROL

6) INDUSTRIAL WATER

17 OTHER APPLICABLE REFERENCE DOCUMENTATION

MSFC SPECIFICATION 166D, 20085076.
TEST AND CHECKOUT REQUIREMENTS, SPECIFICATIONS AND CRITERIA FOR USE AT KSC. 60005050

KSC OPERATIONS AMOULD SATURN TEST AND OPERATIONS CATALOG SH	PAGE 1 OF 2
	Z PSC TIST NUMBER
THE TABLE STAGE VENT & RELIEF VALVES CRACK & RESEAT	V-24536
VINITATION	* "AS-STZ" & Subs AS-206 & Subs
EST COLCT VES	A3-700 & 3303
The purpose of this procedure is to perform a crack	& reseat verification of the
10% & LH2 propellant tank vent and relief valves.	Ser .
LST DESCRIPTION ECOIPMENT STATUS CONFIGURATION	
	TIONS
THIS TEST [] DOES [] DOES NOT CONTAIN HARARDOUS OPER	
1. Pilot seal crack & reseat verification of follo	wing components:
A. LOX Vent & Relief Valve P/N 1A48312	
B 110% Non-Propulsive Valve P/N 1869030	· ·
C. LH2 Vent & Relief Valve P/N 1A48257 D. LH2 Latching Relief Valve P/N 1B74535	
b. The catelling wassers of the second	
CONFIGURATION: TEST	REQUIREMENTS - SAT V - MSFC
1876	
Components to be tested in PCOL Lat. 0.2.	3.4.9.5 3.2.1.1
0.2.	3.4.10.6 3.2.1.2
	3.7.9.5 3.2.1.3 3.7.10.6 3.2.1.4
	•
<u>SAT</u>	IB - MSFC 1886721
The state of the s	.4.4.9.4 3.2.1.1
	.4.4.10.4 3.2.1.2 .4.6.9.4 3.2.1.3
	.4.6.9.4 3.2.1.3 .4.6.10.4 3.2.1.4
D. 3/16/73 Added Bench Test Requits for S-V & S-IB	The first will be the same
	you Gum John In
C 12/22/72 Added SIB Requirements Ref. MSFC:18867 Revised block 3 effectivity, revised b	lock A CONTRACT METATE
B 9/8/72 added test requirements to block 5.	100 4, 1 11 1/1.11-2 Minkhong
A 16/9/72 Added support requirements to block 16	. /S/W.P. Tenitto /S/W.S. Mahani Contractor Approval KSC Approval
REV DATE REASON	9 DATE
	Comment

LV-MEC-24

1-20-72

/S/ W. G. Manoney KSC FORM 23:336 17: 871

APOLLO S	TURN TEST AND OPERATIONS CATALOG (SHEET 2)	100	
TEST TITLE		3 75.	Commission of the commission o
SIVB-B/IB STAC	E VENT & RELIEF VALVES CRACK & RESEAT	3 68666	- KING & MI
VAB	IA COMPUTE- PROC. INDENTIFICATION N/A		vest toda Hours
SUPPORT REQUIRER	NTS		
None			
OTHER APPLICABLE	REFERENCE DOCUMENTATION		and the second s
S. ITEM CONTINUATIO			
•			
	and the property of the first first		

KSC OPERATIONS APOLLO SATURM TEST AND OPERATIONS CATALOG SHEET	PAGE
	2, KSC TEST NUMBER
STARE REPLACE FACE VERTICAL STORAGE CELL AND INSTALLATION	V-24537
TOTAL STATE CHECKOUT. DSV-4B/SAT. 1B, KSC	209 & SUBS
1 TEST DB. EST NES	
THIS DESCRIPTION TAINS INSTRUCTIONS TO REMOVE A PREVIOUSLY INSTRUCTION TO REMOVE A PREVIOUSLY	TALLED S-IVB STAGE FROM LL, NORMAL FLOW.
S TOUT DOSCA AT DN EQUIPMENT STATUS CONFIGURATION	
THIS TEST TO DOES DOES NOT CONTAIN HAZARDOUS OPERATIONS.	
THE FOLLOWING OPERATIONS ARE INCLUDED:	
1. OSLER DEFLATION AND REMOVAL OF COVER FROM STAGE. 2. MOLE OF STAGE TO LOW BAY TRANSFER AISLE.	
ELT REMOVAL OF BIO FORMARD ACCESS KIT.	
6. FEMDLAL OF FORLARD HANDLING RING. 7. HOTAL 402 FORWARD ACCESS RIT.	
93 PETRINE OF STORAGE DESICCANT HARDWARE AND INSTALLATION OF MARDWARE.	NORMAL FLOW DESICCANI
THE FOLLOWING EQUIPMENT/CONFIGURATION MUST EXIST.	
1. STAGE INSTALLED INTO STORAGE CELL. 2. STAGE IS ON STORAGE DESICCANT SYSTEM.	
la transport de la companya de la c	TEST REQUIREMENTS
r de la companya de	ASFC: N/A
	;
	014/14
6-2-74 CELETE SOOF INTERSTAGE	KU English Manphay
A 7-11-72 Deleted Reference to Saturn V RD	K. 4 English Wylhony
# 15. DATE REASON 1.1 1. TOUR LOTTER ADDROVAL 8. ORGANIZATION 9. D.	Contractor Approval KSC Approval
Gill Sorpey MOAC	1-25-72
11. ORGANIZATION 12. /	APPROVAL DATE
Mithelioner LV-MEC-24	Jan 25, 1972
452 F244 24:336 7/67.	

APOLLO/SATURN TEST AND OPERATIONS CATALOG (SHEET 2)		PASE <u>2</u>	¢
TEST TITLE		2. MSC TEST NUMBE V-24537	6
STAGE REMOVAL FROM VERTICAL STORAGE CELL AND INSTALLATINTO LOW DAY CHECKOUT. DSV-48/SAT. 1B, KSC	TION	209 & SUBS	
13. LOCATION 14. COMPUTER PROC. INDENTIFICATION VAD		ID. EST. TEST TIME	
16. SUPPORT REQUIREMENTS			•
SID-24537-D			
			•
17. OTHER APPLICABLE REFERENCE DOCUMENTATION			
TCP V-24455			•
TCP V-24425			
18. ITEM CONTINUATION			
		•	

		•	
		<u>'</u>	
			E**

4 TEST OBJECTIVES

TO FUNCTIONALLY CHECK THE PINEUMATIC SYSTEM FLOW RATES AND PRESSURES DURING A LOW PRESSURE BLEED DOWN.

5 TEST DESCRIPTION EQUIPMENT STATUS CONFIGURATION

THIS TEST __ DOES X DOES NOT CONTAIN HAZARDOUS OPERATIONS.

THE PNEUMATIC SYSTEM SPHERES ARE PRESSURIZED TO 1700 PSIG BY REMOTE OPERATIONS FROM THE LCC. THE SPHERES ARE ALLOWED TO STABILIZE A MINIMUM OF 1 HOUR. THE PNEUMATIC SYSTEM FILL VALVES ARE CLOSED AND THE SPHERES PRESSURE BLEED RATE IS MONITORED FOR A MINIMUM OF 2 1/2 HOURS.

CONFIGURATION: VEHICLE ERECTED WITH STAGE POWER APPLIED.

PHASE: V

TEST REQUIREMENTS

MSFC: 7921601 0.3.5.2.8.1 0.3.5.2.8.1.1 0.3.5.2.8.1.1 0.3.5.2.8.2 0.3.5.3.4.1 0.3.5.3.4.2 0.3.5.3.4.2

3	2-6-4	REVISED BLOCKS	3, 5 AND 17		DY Rling	Buli
÷	1-3-73	REVISED TEST A	REOUTREMENTS		G.E. LECKIE	P. SCHMID
14 861	DATE	<u> </u>	REASON		Contractor Approval	KSC Approval
	E. LECKI		B GRGANIZATION IBM - K73	9 0	ATE JUNE 30, 1972	
1899	APRIAPPRI AUL W. SC		11. ORGANIZATION LV-MEC-25	12.	APPROVAL DATE JUNE 30, 1972	1

	and the second s		
APOLLO/S	SATURN TEST AND OPERATIONS CATALOG (SHEET 2)		PAGE 2 OF 2
ILL PNEUMATIC S	YSTEM LP BLEED DOWN TEST		2-24561
,10	TOTAL COLLEGE BONN FEST		AS-206 & SUBS
19. LOCATION	14. COMPUTER PROC. INDENTIFICATION		.5 EST. TEST TIME
LC 39A, B, C	N/A		-0 HOURS
16. SUPPORT REQUIREM	ENTS		
INTERSTAGE:	SIVB STAGE POWER (NOT APPLICABLE FOR 513	\$ 515)	
OFF-COMPLEX:	N/A		
ON-COMPLEX:	IBM QA IU STAGE POWER HP GAS		

7 OTHER APPLICABLE REFERENCE DOCUMENTATION

OIS

MEASUREMENTS DDAS

IBM MECHANICAL

7921601 10Z22204

MSFC-MAN-014 MSFC-MAN-008

18. ITEM CONTINUATION

KSC OPERATIONS APOLLO/SATURN TEST AND OPERATIONS CATALOG SHEET	PAGE 1 OF 2	
STAGE PREPARATION, ORDNANCE INSTALLATION	2. KSC TEST NUMBER V-24562	
AND TRANSPORTATION TO PAD, SATURN IB	206 & Subs	
PREPARE THE S-IVB-IB STAGE FOR ORDNANCE INSTALLATION AND TR THE VAB TO THE PAD.	ANSFER FROM	

S. TEST DESCRIPTION/EQUIPMENT STATUS/CONFIGURATION

THIS TEST | DOES | DOES NOT CONTAIN HAZARDOUS OPERATIONS.

- CLEAR FORWARD AND AFT ACCESS KITS OF ALL UNNECESSARY EQUIPMENT AND VERIFY THAT THE KITS ARE PROPERLY INSTALLED AND SECURED.
- 2. VERIFY MODEL DSV-4B-357 PLATFORM INSTALLED FOR ORDNANCE INSTALLATION.
- 3. VERIFY EXTERNAL PLATFORMS AVAILABLE FOR ORDNANCE INSTALLATION.
- 4. VERIFY GROUNDING AND CLEANING PREPS FOR ORDNANCE INSTALLATION.
- 5. VERIFY FAIRINGS AND TUNNEL COVERS ARE INSTALLED.
- INSURE THAT THE BLANKET PPESSURE OR DESICCANTS ARE ON THE TANKS PER PROPULSION PROCEDURE V-24462 OR V-24447, STATIC DESICCANT PROCEDURE.
- 7. VERIFY THAT THE THRUST STRUCTURE DOORS AND AFT INTERSTAGE DOOR HAVE BEEN INSTALLED.
- VERIFY THE SAFETY LOCKS HAVE BEEN INSTALLED ON THE FORWARD AND AFT UMBILICAL CARRIERS.
- VERIFY FORWARD AND AFT SWING ARM TIPS HAVE BEEN RETRACTED FROM THE VEHICLE;
 VERIFY MDAC RESPONSIBLE EQUIPMENT ON LUT IS SECURED AND POLICED.
- 10. VERIFY EQUIPMENT BETWEEN STAGE AND EXTENSIBLE PLATFORM "B" AND "C" ARE REMOVED AND THE STAGE IS READY TO MOVE TO THE PAD.

EQUIPMENT STATUS/CONFIGURATION

S-IVB STAGE HIGH BAY CHECKOUT COMPLETE

TEST REQUIREMENTS

1		I Total		- a- p	12
				Section .	
6. REV.	DATE	t in diele in	REASON	Contractor Approval	KSC Approval
7. CONTR	ACTORAPE	PROVAL	8. ORGANIZATION	9. DATE	
RG	6	1:1	MDAC	7-12-72	
IO. NASA-	KSC APPAO	VAL LE 7-13 2	11. ORGANIZATION	12. APPROVAL DATE	
1/3	473	hones	LV-MEC-24	7/17/2	
KSC FOR	4 23-350 17/6	671	У 1		

APC	LLO/SATURN TES	T AND OPERATIONS CATALOG (SHEET 2)	PAGE 2 OF 2
STAGE PREPARATION, ORDNANCE INSTALLATION AND TRANSPORTATION TO PAD, SATURN IB			V-24562 D. EFFECTIVITY 206 & Subs
VAB HIGH		TER PROC. INDENTIFICATION N/A	18. EST. TEST TIME 12 HOURS
16. SUPPORT RE			
NONE			
110112			
	**		
7.			· •
17. OTHER APPL	ICABLE REFERENCE	DOCUMENTATION	
		-	*
18. ITEM CONTI	IUATION		
1			
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Ty and			
		The second secon	
Y .			> 기 기 기 기 기 기 기 기 기 기 기 기 기 기 기 기 기 기 기
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(A)		The second of the second	
19			

62

	KSC OPERATIONS ST AND OPERATIONS CATALOG SHEE	т .	PAGE 1	of2
TOTALE		i	SC TEST NUMBE	L #
		7	7-24579	
S-IB STAGE REMOVAL P	ROM STORAGE		AS-209 &	AS-210 .
" 6 5 " DB. ECT. 4 E5		· · · · · · · · · · · · · · · · · · ·		
PEPFÖRM SPECIAL OPER	ATIONS REQUIRED TO REMOVE	THE S-IB S	STAGE FRO	M
THE STORAGE TENT.		•		
			, ·	•
			•	
TOST SESSE PTION EQUIPMENT STA	ATUS CONFIGURATION	· · · · · · · · · · · · · · · · · · ·		.,
THIS TEST DOES XX !	DOES NOT CONTAIN HAZARDOUS OPERATI	IONS.		
1. DEFLATE TENT. 2. DISMANTLE FUEL A	ND LOX TANK PRESSURIZATION	CVCTTM	(%e 200 o	NIT W\
3. DISMANTLE STORAG	E ENCLOSURE AND CONTROLS.	SISIEM.	(A5 209 C	MLI).
4. REMOVE VEHICLE F	ROM TENT.			
	E SHIELD SUPPORT ASSEMBLY.			
	NE FLAME CURTAINS. ENTAL AND PROTECTIVE COVER			
ENATED ENATEONS	ESTAL AND PROTECTIVE COVER			
	BE ACCOMPLISHED WITH THE V	EHICLE IN	A VERTIC	AL
ALCO HORIZONTAL CONFI	GURATION.			
PHASE: "N/A		QUIREMENT	<u>3</u>	
	N	i/A		
		-		
			4 to 12	
DFV. DATE	REASON	Cantro	ctor Approval	KSC Approval
DEV. DATE	REASON 8 ORGANIZATION	9. DATE		KSC Approval
	8 GRGANIZATION	9. DATE	ctor Approval	
CONTRACTOR APPROVAL		9. DATE	- 25-7	

APOLLO SATURN TEST AND OPERATIONS CATALOG (SHEET 2).	PASE _	2_cr_2_
S-IB STAGE REMOVAL FROM STORAGE	12 +35 *85 % - West	
•	AS=209	v & AS-210
TA COMPUTER PROC INDENT FICATION	15 EST TEST	~,~£
VAB N/A	48 H	OURS
TE SHIPPHT REQUIREMENTS		-
(1) Rocketdyne		
	•	
. The state of th		
		<i>-</i>
17 OTHER APPLICABLE REFERENCE COCOMENTATION 60C11002 S-IB STAGE STORAGE PLAN AT KSC		
PEV-1164		
R-3620-4 60C12272		
18 ITEM CONTINUATION		

tion of the st

A. ...

A. TO FILL IT AND SUPPLIES COOLING UNIT WITH COOLANT.

5. TO DRAIN COOLANT FROM GROUND SUPPORT COOLING UNIT.

C. TO TRANSFER COOLANT FROM GROUN COOLANT LINES AND/OR TRANSFER COOLANT LINES
TO A 9500.

D. TO GN2 LEAK TEST AND COOLANT FILL SWING ARM OAT LINES.

THE COOLANT USED IS OPPOSITE FLO-COOL 100.

TEST DESCRIPTION EQUIPMENT STATUS CONF. SURATION

THIS TEST DOES X DOES NOT CONTAIN HAZARDOUS OPERATIONS.

THIS PROCEDURE IS DIVIDED INTO FOUR PARTS:

PART I GSCU IS FILLED BY TRANSFERRING COOLANT FROM A SUPPLY CONTAINER INTO LOGLANT RESERVOIR.

COCLANT IS DRAINED FROM GSCU USING GSCU PUMP AND GN2 SYSTEMS. GRAVITY F197 [[DRAIN WAY ALSO BE USED.

FART ::: COCLANT IS TRANSFERRED FROM GSCU USING GSCU PUMP INTO COOLANT LINES, ALD/OR COOLANT IS TRANSFERRED FROM COOLANT LINES USING GN2 INTO A GSCU.

FART IN LEAK CHECK AND COOLANT FILL OF SWING ARM OAT LINES.

AFFECTIVE COCLAST BRAIN IN SUPPORT OF LAB OPERATIONS.

THE GRATION: GSCU INSTALLED ON THE UMBILICAL TOWER.

THARF: IB

TEST REQUIREMENTS

MSFC: N/A

	1 1 174	PENISED BLOCKS 3, 4 AND 5	カスかりかり	17.1.1.1
	77	HEVISED BLOCKS 5 AND 16	G.E. LECKIE	P.W. SCHMID
		PENISED BLOCKS 3, 5 AND 16	G.E. LECKIE	P.W. SCHMID
	1 L L	HELISE BLOCK 16 HELIS STORES OF THE	G.E. LECKIE	P.W. SCHMID
	7475	REASON	Contractor Approval	KSC Approval
1	E. ESPA		FEBRUARY 25, 1	970
	SSHMI	1	12. APPROVAL DATE FEBRUARY 25, 1	970

PAJE_2 _ ?= _2_ APOLLO SATURN TEST AND OPERATIONS CATALOG (SHEET 2) 13. 12.6.20.00.0 1 11 -1 11111 GSCU FILL, DRAIN AND COOLANT TRANSFER AS-209 & SUBS AS-512 & St " CST. TEST T WE 14 COMPOSER PROC INCENTIFICATION 13 LOCATION 2 MEN - 3 HOURS LC 39 N/A 16 SUPPORT REQUIREMENTS SID - 26491-1 NONE INTERSTAGE OFF - COMPLEX BENDIX IBM QA ON COMPLEX IBM MECHANCIAL LV-QUAL 17. OTHER APPLICABLE REFERENCE DOCUMENTATION 7919372-001 18 ITEM CONTINUATION

	APOLLO SATURN T	KSC OPERATIONS EST AND OPERATIONS CATALOG SHEET	PAGE _ 1 _ OF _ 2
-647	CROLITE SAMPLING		V-26492 3 EFFECTIVITY AS-209 & SUBS
	MENTS. COOLANT U	USED IN IU/SIVB THERMAL CONDITIONIN SED IS ORONITE FLO-COOL 100.	
1 3	THIS PROCEDURE IS	SOES NOT CONTAIN HAZARDOUS OPERATIONS DIVIDED INTO TWO PARTS: DISTEM VALIDATION SAMPLING BY LOOP SAMPLE	
	CVAFIGURATION: N	TEST REQUIREMENTS AS-200 & SUBS MSFC: 7921601 0.3.5.2.6.1.1 0.3.5.2.6.1.1.2 0.3.5.2.6.1.1.2 0.3.5.2.6.1.1.2.3 0.3.5.2.6.1.1.2.3 0.3.5.2.6.1.1.3 0.3.5.2.6.1.1 0.3.5.2.6.1.1 0.3.5.2.6.1.2 0.3.5.2.6.1.2 0.3.5.2.6.1.2	TARE CALLED CO. LEGIS CO.
		LUCKS 3 AIC 5	1-7 XR 1211/2 J4 / 1/2 J
	10-11 PEVISE BU	OCK 5	JETechie Jalliklini
2	- 17/72 REVISED 8	LOCKS 3, 5, & 16	VE Like ylight feel holen.
1	A-8-0 UPDATE	MSFC REQTS. REF RSCC 53	DELL di Farfully
12-1:-	7 2/5/2	11 ORSANIZATION	MARCH 5, 1970
2.1	2.11/hlm	20. MEC-25	The state of the s

APOLLO SATUR	N TEST AND OPERATIONS CATALOG (SHEET 2)	PAGE _2 _ OF _2
TEST TITLE	The second secon	Z KSC TEST NUMBER
		V-26492
ORONITE SAMPLIN	G	AS-209 & SUBS
3. LOCATION . 14.	COMPUTER PROC. INDENTIFICATION	15. EST. TEST TIME
LC39	N/A	N/A
S. SUPPORT REQUIREMENTS		
INTERSTAGE:	NONE	
OFF-COMPLEX:	BEND1X .	
ON-COMPLEX:	IBM QA IBM MECHANICAL	
	LV QUAL	
TOTHER APPLICABLE REFE	ERENCE DOCUMENTATION	
7919372-1		ALTERNATION OF THE PARTY OF THE
& ITEM CONTINUATION		
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The second second	and the second of the second o	

KSC OPERATIONS : AFOLLO SATURN TEST AND OPERATIONS CATALOG SHEET	PAGE 1 0F 2
SOCE O FOYS FUNCTIONAL TEST (STANDBY)	V-26497 AS REQUIRED
12 1 1 1 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2	

TO VERIER THE GROWND SUPPORT COOLING UNIT (GSCU), FLOW CONTROL VALVE BOX (FCVB), ALC BERVICE LINES ARE OPERATIONAL.

THE STREET CORS TO SEE THE CONTAIN HAYARDOUS OPERATIONS.

- 1. THE SECUTS, FOVE, AND ASSOCIATED LINES ARE SYSTEMATICALLY INSPECTED TO NEPIER ALL LINES, FITTINGS, ETC. ARE PROPERLY CONNECTED.
- 1. THE FOVE IS CYCLED AND THE FOVE TEST SET INDICATORS ARE MONITORED FOR AND PURPLIES.
- 3. LITTER ARE INGREMENTALLY PRESSURIZED TO 50 PSIG WITH GN2 AND ARE LEAK SHESHED USING LEAK DETECTOR SOLUTION.
- W. TRESFURE DECAY CHECKS ARE MADE AT 50 PSIG TO INSURE INTEGRITY.
- . SIGN IN TESTED TO VEHIEFY PREDSURES, FLOW RATES, AND TEMPERATURES.
- THE POT CAN EXPLASS, LETCH FIRE LOW PRESSURE CUTOUT SWITCHES, AND PNEUMATIC CATEGRAL AND TORKTHOWALLY TESTED.
- 7. THE UNITS ARE OPERATED WITH FLOW THROUGH THE HEAT LOAD SIMULATOR TO VERIFY THIS ERATURE MAY BE STABILIZED WITH A VARYING HEAT LOAD.

THE REPATIONS INSTALLED BY THE LUT WITH GROUND POWER AND FACILITY GN2

	ACTUAL LED.	
NAME OF TAXABLE PARTY.		TEST REQUIREMENTS
	•	- 11/A
	2 18 6 % PEV. HISTORY CONTINUATION	
	, TO 1, 1,-HARAPLINUS TEST	16 /2 1 1 UN 11 1 Voged
-/7:11 HEV	ISED BLOCKS 3, 5, ALD 16	Chapter wietz in hitching
	IBE TO A EXPONENTATION TO SEE	I we kee felling
	PEASON	Contractor Approval KSC Approval
1 1784 Turk 473-3144	9 07 14 N 2 5 T-2 N	2 CATE
	ist 2811 677	6/14/20
· · · · · · · · · · · · · · · · · · ·	The state of the s	12 APPINOTAL DATE

APOLLO SATURN TEST AND OPERATIONS CATALOG (SHEET 2)	PAGE 2 OF 2	
TEST TITLE	V-26497	
GSCU & FCVB FUNCTIONAL TEST (STANDBY)	AS REQUIRED	
3 LOCATION 14 COMPUTER PROC. INDENTIFICATION N/A	2 MEN, 30 HOURS	

1. INTERSTAGE REQUIREMENTS: N/A

2. OFF-COMPLEX SUPPORT:

3. ON-COMPLEX SUPPORT:

IBM QA

IBM MECHANICAL

OTHER APPLICABLE REFERENCE DOCUMENTATION

MSFC-MAN-008 MSFC-SPEC-164 IBM NO-JB20007

MC-245

18. LTEM CONTINUATION

					٠
D	4/2/73	REVISED BLOCKS 1	1 & 3	Telan 4-4-13 6/12 L	
E	7/17/74	REVISED BLOCKS 1	3 & 17	53 R. Dy 7/34/14 // SL	A Distriction

The second of the second

7

KSC CPERATIONS PAGE 1 OF 2 APOLLO SATURN TEST AND OPERATIONS CATALOG SHEET E KSC TEST NUMBER TEST TITLE V-26532 3 EFFECTIVITY S-IE HOLDDOWN ARM QUALIFICATION TEST 206 & Subs

A TIST OFFICTIVES

THE OBJECTIVE OF THIS TEST IS TO VERIFY THE ENTIRE HDA SYSTEM IS FUNCTIONALLY ACCEPTABLE TO SUPPORT LAUNCH.

S TEST TEST TEST PTION EQUIPMENT STATUS CONFIGURATION

THIS TEST TOES TOES NOT CONTAIN HAZARDOUS OPERATIONS.

PART 1

The separator flex hoses are plugged and the panel is actuated from the firing accessories control console, in the LCC, to verify panel operation and to leak check the final panel connections.

PART II

The MMA pneumatic system is connected in such a way as to check the reverse flow in the separator check valves. The release valves are eperated independantly to verify proper operation. The primary and secondary pneumatic drops are performed from the firing accessories control console, the release valve and arm release times are recorded and final leak checks achieved.

PART III

The final drop is considered a flight configuration drop. All explosives are simulated and all times recorded. The system is returned to a standby configuration ready for testing and launch.

CONFIGURATION: Vehicle is in a vertical mated position.

TEST REQUIREMENTS MSFC - N/A

4-12-73 beletion of	explosive release change	5. Dury tota Milate
b 2/15/75 Explosive	Release Requirement Pelet	0 91: 54 all 1 1/14/17
\ 6/20/70 Fifectivit	v changed per TL-2-17, Ro	evFl.H. Childers S/A 6/27/5
B REV. N. DATE	REASON	Contractor Approval KSC Approval
CONTRACTOR APPROVAL	8. ORGANIZATION	9 DATE
Gene F. Gorrell	CCSD	3-24-71
NASH NSC APPROVAL	11. ORGANIZATION	12 APPHOLAL DATE
S'A G. H. Robinson	LV-MEC-12	3-25-71

APOLLO SATURN TEST AND OPERATIONS CATALOG (SHEET 2)	PAGE _ 2_062
1. TEST TITLE	2. KSC TEST HUMBER
	V-20532
S-IB Holddown Arm Qualification Test	S. EFFECTIVITY
	206 & 5
13 LOCATION 14 COMPUTER PROC. INDENTIFICATION	15 F S F, T L S T T 104
ML N/A	32 Hrs.

6. SUPPORT REQUIREMENTS

Vehicle Networks

RCA 110A Computer

Ground Networks

OIS

DEE-6

OTHER APPLICABLE PEFCHENCE DOCUMENTATION

TM-627 HOLDDOWN ARM OWM MANUAL 75M01821 HOLDDOWN ARM ASSEMBLY

19 ITEM CONTINUATION

VACUUM PUMP
P M AND CHECKOUT

KSC OPERATIONS
CATALOG SHEET

PAGE 1 of 2

CASC 163- NUMBER
V-26533

SEFFECTIVE
GSE-LC-39

To maintain the KC-8RKC-8D, and KTC-21D vacuum pumps in agrimum, operation condition.

TOTAL CASCA PTION ES. PMENT STATUS CONFIGURATION

THIS TEST TODES X DOES NOT CONTAIN HAZARDOUS OPERATIONS.

Prince test organization is propellants.

Perform operational checkout and preventive maintenance on vacuum pumps.

PHASE N/A

CONTENED

TEST REQUIREMENTS

N/A

A JUNEAU CRUAL - N	O LONGER REQUIRED	a.c. Motor, 55Hold
PEV DATE	PEASON	Contractor Approval KSC Approval
C. C. Nitan	CCSD	9. DATE 3/26/7/
ENSANCE ATTOONS	11. ORGANIZATION	12. APPROVAL DATE 3/26/7/

APOLLO SATURN TEST AND OPERATIONS CATALOG (SHEET 2)	PAGE 2 0F 2 .			
TEST TITLE	2 +50 TEST NUMBER			
VACUUM PUMP	V-20533			
P. M AND CHECKOUF				
LOCATION 14 COMPUTER PROC INDENTIFICATION	GSE LC-39			
Shop (VAB) N/A	One (1) Day			
SUPPORT REQUIREMENTS				
NONE				
OTHER APPLICABLE PEFERENCE DOCUMENTATION				
(A) Kinney Corp.; KC-8.Service Manual (B) Kinney Corp.; KTC-21 Service Manual				
(2) Miney outp., Mio-21 Service Mandar				

9

KSC OPERATIONS
APOLLO/SATURN TEST AND OPERATIONS CATALOG SHEET PAGE 1 OF 2 . KSC TEST NUMBER S. TEST TITLE V-26546 IU AIRCRAFT LOADING S. EFFECTIVITY AS REQUIRED 4. TEST OBJECTIVES LOAD IU ON SUPER GUPPY AIRCRAFT 5. TEST DESCRIPTION/EQUIPMENT STATUS/CONFIGURATION (REPLACES IV-26008) DOES NOT CONTAIN HAZARDOUS OPERATIONS. THIS TEST [X] DOES THE IU IS LOADED ONTO THE ADAPTER THAT HAS BEEN PREVIOUSLY FASTENED TO THE CARGO LIFT TRAILER. BOLTS ARE INSTALLED TO FASTEN IU TO ADAPTER AND THEN THE HOISTING SLING IS DISCONNECTED. THE CLT IS ALIGNED WITH SUPER GUPPY AIRCRAFT, AND GENERAL PURPOSE PALLET WITH IU IS LOADED INTO THE AIRCRAFT. THE PALLET IS THEN SECURED IN THE AIRCRAFT, THE CLT REMOVED, AND THE AIRCRAFT SECURED FOR FLIGHT. Contractor Approval KSC Approval REASON 6. REV. DATE B ORGANIZATION IBM - K73 1. ORGANIZATION LV-NEC-25

	30								
APOLLO/SATURN TEST AND OPERATIONS CATALOG (SHEET 2)						PAGE _2_ OF 2			
TEST TITLE					V-26546 3. EFFECTIVITY				
IU AIRCRAFT LOADING									
	14. COMPUTER PROC. INDENTIFICATION			AS REQUIRED					
SKID STRIP	N/A	OEA HETCA HOA			6 ME	N 12	MAN	HOURS	
SUPPORT REQUIREME	NTS								
					~				
INTERSTAGE: NO	NE								
OFF-COMPLEX: RD	40090-3F								
ON-COMPLEX: IB	M QA								
18	M MECHANICAL								
	C SAFETY								
PA	A SAFETY								
90M01969 R-TEST-V-102									
ITEM CONTINUATION									
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RSC FORM 23.336 (7/87)

II ORGANIZATION

Witte es

Luca 21, 1971

APOLLO/SAT	URN TEST	AND OPERATIONS C.	ATALOG (SHE	ET 2)	1	PAGE _	0	F _2
1. TEST TITLE					1.	2. KSC TEST NUMBER		
	LING EQUIF	PMENT P/M				V-26547 EFFECTIVE		
3. LOCATION	LA COMPUTES	PHOC INDENTIFICATI	ON		1,5	EST, TES		
LABORATORY	N/A					2 MEN,	6 MA	N HOURS
6. SUPPORT REQUIREMEN	TS							
INTERSTAGE REQU	IREMENTS:	N/A						
OFF-COMPLEX SUP	PORT:	SENDIX WIRE RO	PE SHOP					
ON-COMPLEX SUPP	ORT:	IBM QA IEM SAFETY LV-QAL KSC SAFETY						
					٥			
7 OTHER APPLICABLE F	FFERENCE DO	CUMENTATION						
KSC-STD-S-000 DRAWING HT-32	1 B							
8. ITEN CONTINUATION								
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(4) (4) (4) (4) (4) (4) (4) (4)								
		Edward (1981)						
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1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -								

APOLLO/SATURN		ERATIONS OPERATIONS		SHEET	PAGE _1	_or <u>2</u> _	7
TEST TITLE			14.		2. KSC TEST NUME V-26548	ER	7
In cobbostor	HERECTION			. A set sed	3. EFFECTIVITY	AS-209 & S	UBS

TEST OBJECTIVES

TO THOROUGHLY INSPECT THE INSTRUMENT UNIT EXTERIOR, INTERIOR, TUBING/FLEXHOSES/ FITTINGS, COLD PLATES AND COMPONENTS FOR:

- 1. ANY EVIDENCE OF CORROSION OR MATERIAL DETERIORATION.
- 2. ANY EVIDENCE OF STRESS CORROSION CRACKING IN PARTS SUSCEPTIBLE.

SITEST DESCRIPTION EQUIPMENT STATUS CONFIGURATION

THIS TEST DOES TX DOES NOT CONTAIN HAZARDOUS OPERATIONS.

- 1. INSPECTION OF ALL STRESS CORROSION SUSCEPTIBLE PARTS WILL BE PERFORMED WITHIN 97 DAYS FOLLOWING:
 - (A) LAST STRESS CORROSION INSPECTION PRIOR TO IU SHIPMENT TO KSC.
 - (B) POST-STORAGE STRESS CORROSION INSPECTION, IF IU WAS PREVIOUSLY IN LONG-TERM STORAGE AT KSC.
- 2. SUBSEQUENT STRESS CORROSION INSPECTION(S) WILL BE PERFORMED AT 90 ± 7 DAY INTERVALS, WITH THE FINAL INSPECTION OCCURRING WITHIN 30 DAYS OF
- 3. IN ADDITION, A COMPREHENSIVE CORROSION/MATERIAL DETERIORATION INSPECTION WILL BE PERFORMED ON THE 10 STRUCTURE, UMBILICAL, CABLE TRAY, BRACKETING, TCS/GN2 SYSTEM TUBING & COMPONENTS AND COMPONENT/COLD PLATE INTERFACES. THIS INSPECTION WILL BE PERFORMED COINCIDENT WITH STRESS CORROSION INSPECTION WHERE PRACTICABLE, BUT IS SPECIFICALLY DESIGNED FOR PERFORMANCE CNICE PRIOR TO ROLL-OUT AND SUBSEQUENTLY ONCE WITHIN 30 DAYS PRIOR TO LAW YOH ..

CONFIGURATION: CABLE TRAY INSPECTION REQUIRES REMOVAL OF HYPERGOL PROTECTION CABLE TRAY COVERS.

PHASE - SEE BLOCK 18

TEST REQUIREMENTS - SEE BLOCK 18

C 7-31-74 REVISED BLOCKS S 27.11774 PEVISED BLOCKS	er ar of the		DX Riley	
A 4/7/72 PEVISED BLOCKS	1, 3, 5, 13 AND 16		G. E. LECKIE	
& DEV. DATE	REASON		Contractor Approval	KSC Approval
G.E. LECKIE	BM - K73	3 1 261	6-21-71	
PAGE W SOMID	LV-MEC-25		6-1-71	

	APOLLO S	ATURN TEST AND OPERATIONS CATALOG (SHEET	2)	PAGE 2_ CF 2_ N
- 14 - 44 - 41			1	V-26548
	10 CORROSION		S EFFECTIVITY AS-209 & SUBS	
	MAB, LC39	N/A	A - a - a - a - a - a - a - a - a - a -	4 MEN - 10 HOURS
	16. SUPPORT REQUIREM	INTS		

INTERSTAGE REQUIREMENTS: NONE

OFF-COMPLEX SUPPORT:

NONE

ON-COMPLEX SUPPORT:

IBM QA LV QAL

IBM MECHANICAL

IBM NETWORKS

17. OTHER APPLICABLE REFERENCE DOCUMENTATION 30Z13106-1 7914561-1 10Z22204-1 (SAT 1B) 30Z13100-1 20242023-1 TM-011-001-2H 30Z13104-1 11Z00055-5 (SAT IB) 7910120-3 7921601 30Z13105-1 7921601 30Z13107-1

18. ITEM CONTINUATION

PHASE: IV, V, VI

TEST REQUIREMENTS

MSFC: 7921601 TM-011-001-2H

> 0.3.3.2.1 B.1.3.4 0.3.3.2.1.1 0.3.3.2.2

KSC OPERATIONS PAGE 1 OF 2 APOLLO SATURN TEST AND OPERATIONS CATALOG SHEET KSC TEST NUMBER V-26549 EQUIPMENT PRESSURIZATION EFFECTIVITY AS-206 & SUBS

TEST COLECTIVES

TO PRESSURIZE TEST EQUIPMENT WITH GN2, INCLUDING THE STAGE-MOUNTED INTERSTAGE SEPARATION SIMULATOR (SAVAGE SAM), IN STAGE COMPONENTS, IN PRESSURIZED LIGHTING SYSTEM AND IU DIS BOXES.

THIS TEST 7 DOES

DOES NOT CONTAIN HAZARDOUS OPERATIONS.

ENIPHENT PRESSURIZATION

THE 750 PSIG GN2 PRESSURE SOURCE, PURGE SUPPLY IS SUPPLIED TO THE END OF THE SALLS ARM. THE INLET OF A REGULATED TEST PANEL IS CONNECTED TO THE GN2 SUPPLY, AT THE SHITIS ARM BY A FLEX HOSE. EQUIPMENT TO BE PRESSURIZED IS CONNECTED TO THE OUTLET OF THE REGULATED TEST PANEL WITH A FLEX HOSE AND PRESSURIZED.

LIGHT & 10 GIS BOX PRESSURIZATION

THE GN2 PRESSURE SOURCE, SUPPLIED FROM THE GN2 PURGE PANEL (750 PSI OUTLET) FOR SATURE, V, TO THE END OF THE SWING ARM. THE INLET OF A REGULATED TEST PANEL IS SOMESTED TO THE GNZ SUPPLY AT THE SWING ARM BY A FLEX HOSE. THE IU OIS BOXES APE CORRECTED TO THE OUTLET OF THE REGULATED TEST PANEL WITH FLEX HOSES. THE. LIGHTING SYSTEM PRESSURE CONTRROL BOX IS CONNECTED TO THE OUTLET OF THE REGULATED. TEST PAREL WITH A FLEX HOSE AND IS USED TO CONTROL THE PRESSURE IN THE LIGHTING SYSTEM. .

PHISE: VI

TEST REQUIREMENTS

ū	3-6-4	PEVISED BLOCKS 3, 5 AD 17		DXR Lux	Phylini
C	1-31-3	PEVISED MSFC REQUIREMENTS & BLOCK 17		G.E. LECKIE	P. SCHMID
E	11-7-2	REVISED BLOCKS 5 ALD 16		G.E. LECKIE	P. SCHMID
4	19-72	REVISED-BLOCKS 3, 5, 16 AND 17		G.E. LECKIE	P. SCHMID
5 251	DATE	REASON		Contractor Approval	KSC Approval
1	LECKIE	STAL SHOWNIZATION IBM - K73	9	JUNE 21, 1971	
1	W. SCHMI	"这一个大大,我们们的大大,一定的事,我们们还有一种好好,一块大块,一块一个一块的老孩子。"	12.	JUNE 21, 1971	

APOLL	O/SATURN TEST AND OP	ERATIONS CATALOG (SHEET 2)	PAGE _2_ CF _2_
I. TEST TITLE		• •	2 KSC TEST NUMBER V-26549
EQUIPMENT PRESSURIZATION		B. EFFECTIVITY	
		•	AS-206 & SUBS
IS. LOCATION	14, COMPUTER PROC. I	NDENTIFICATION	16. EST, TEST TIME
LC 39 N/A		2 MEN 2 MAN HOURS	
16. SUPPORT REQUI	REMENTS		

SID-Y-265491 (AS-206 & SUBS) RD 40092-3BB (AS-512 & SUBS)

INTERSTAGE REQUIREMENTS:

OFF-COMPLEX SUPPORT:

N/A

ON-COMPLEX SUPPORT:

IBM QUALITY ASSURANCE

HP GAS KSC SAFETY

IBM MECHANICAL

TM-542 TM-475

8. ITEM CONTINUATION

KSC O APOLLO/SATURN TEST AN	KSC OPERATIONS APOLLO/SATURN TEST AND OPERATIONS CATALOG SHEET			
1. TEST TITLE	And the second s	V-26682		
TU STORAGE AND MAINTENANCE		3 EFFECTIVITY		
	Ar on A art A	AS- 209 & SUBS		

4 TEST OBJECTIVES

TO VERIFY THE 1U UNVIRONMENT AND PHYSICAL CONDITION REMAIN WITHIN SPECIFIC REQUIREMENTS DURING THE STORAGE PERIOD.

S TEST DESCRIPTION EQUIPMENT STATUS CONFIGURATION

THIS TEST () DOES () DOES NOT CONTAIN HAZARDOUS OPERATIONS.

THIS PROCEDURE SPECIFIES THE REQUIREMENTS TO BE MAINTAINED ON THE IU WHILE IN STORAGE BY PERFORMANCE OF THE FOLLOWING TASK AT SPECIFIED INTERVALS.

VERIFICATION OF TEMPERATURES ON DAILY BASIS. VAPOR BARRIER HUNIDITY CHECKS WEEKEY. VAPOR BARRIER AIR SAMPLE AT 3 MONTH INTERVALS. IU CORROSION INSPECTION AND VERIFICATION OF FLATNESS AT 6 MONTHS.

TEST REQUIREMENTS

N/A

A	2-11-74	REVISED BLOC	KS 3 AND 17	198 fr.	All.
REV.	DATE	1127136	REASON	Contractor Approval	
	1.A. 11 11 A/11	MINAI .	BILL YOU	12-11-7	<i>`</i>
0. NASA	-KSC APPRO	VAL	11 ORGANIZATION	12. APPROVAL DATE	,

APOLLO/SA	TURN TEST AND OPERATIONS CATALOG (SHEET 2)	PAGE 2 OF 2
I. TEST TITLE		2 KSC TEST NUMBER V-26682
IU STORAGE AND	MAINTENANCE	AST 209 & SUBS
13. LOCATION MSOB	14. COMPUTER PROC. INDENTIFICATION N/A	2 MEN, 1500 HOURS
	NTS I/A BENDIX SAMPLING	
K K	E C HIGH BAY CRANE OPERATOR SC SAFETY BM QA BM MECHANICAL	

17. OTHER APPLICABLE REFERENCE DOCUMENTATION

STAGE STORAGE PLAN - DRL LINE ITEM NO. 057

18 ITEM CONTINUATION

APOLLO SATURN TEST AND OPERATIONS CATALOG SHEET

2. MSC TEST NUMBER 26683 25

10 PEMOVAL FROM LONG TERM STORAGE

3. EFFECTIVITY AS-209 & SUBS

TO TERMINATE IU LONG TERM STORAGE, PERFORM POST STORAGE INSPECTIONS AND TRANSPORT IN FROM OSC BUILDING TO VAB 1L1 TEMPORARY STORAGE AREA.

TOUR STATUS CONFIGURATION

4 TELT 18/81T .EX

THIS TEST X DOES DOES NOT CONTAIN HAZARDOUS OPERATIONS.

THIS PROCEDURE SPECIFIES THE REQUIREMENTS FOR REMOVAL OF THE IU FROM STORAGE BY REPROPUNDICE OF THE FOLLOWING TASKS:

THE WAPOR BARRIER WILL BE REMOVED.

DRIGH TO REMOVAL FROM THE STORAGE STATION THE IU WILL BE CHECKED FOR VERIFICATION OF FLATLESS REQUIREMENT.

- A CORRESION INSPECTION WILL BE PERFORMED.
- A FASTEMER TORQUE CHECK WILL BE PERFORMED.
- SHOCK RECORDERS WILL BE INSTALLED ON THE IU AND TRANSPORTER.
- THE THEW HELD BE POSITIONED. ON THE TRANSPORTER AND TRANSPORTED TO VAB 1L1.

THE STORAGE STATIONS WILL BE SECURED AS REQUIRED.

- p-25E

TEST REQUIREMENTS

<u></u>	T	REVISED BLOCKS 1, 4 AND 5	10 2. Relay	PUSLIN
1 :	2-11-1	PÉVISED BLOCKS 3 A D 17	J. FAVOR	P. SCHMID
9	1 1 7 1	PEASON	Contractor Approval	KSC Approval
- 1	i ing ing Para	1BM - 906	1-14-74	
	5044:01	· ·	1-11-74	6×560

APOLLO SATURN TEST AND OPERATIONS CATALOG (SHEET 2)	PAGE 2 0F 2
1. TEST TITLE	V-26683
IU REMOVAL FROM LONG TERM STORAGE	AS-209 & SUBS
13. LOCATION 14. COMPUTER PROC. INDENTIFICATION O & C AND 1L1 N/A	6 MEN, 350 HOURS

16 SUPPORT REQUIREMENTS

INTERSTAGE: N/A

OFF-COMPLEX: BENDIX SHOPS

ON-COMPLEX: OSC HIGH BAY CRANE OPERATOR

KSC SAFETY
SECURITY
LV-QUAL
IBM QUAL
IU VEHICLE NETS

IU VEHICLE NETS

17 OTHER APPLICABLE REFERENCE DOCUMENTATION

STAGE STORAGE PLAN - DRL LINE ITEM NO 057

18 ITEM CONTINUATION

8-21-72

8-21-72

12. APPROVAL DATE

KSC OPERATIONS APOLLO/SATURN TEST AND OPERATIONS CATALOG SHEET	PAGE 1_OF_2_
PEAK YOLTAGE MONITOR OPERATION AND INCUCED VOLTAGE DETECTOR INSTALLATION, OPERATION, AND REMOVAL	2. REC YEST NUMBER V-27250 3. EFFECTIVITY 512, 206 - 210
To provide a procedure to install, functionally operate, and Induced voltage Detection System and to operate the Peak Voltage Octated on the 220° of the Mobile Launcher.	Itage Monitor GSE System
(A) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1	
. TEST DESCRIPTION/ECUIPMENT STATUS/CONFIGURATION	
THIS TEST DOES DOES NOT CONTAIN HAZARDOUS OPERATIONS.	
This test shall proceed as follows:	
1. Install the IVD's and interconnecting cable prior to	rollout.
 Periodically monitor the outputs of the IVD's and PV incication of induced voltage and battery status. 	M for a second of the second o
3. Replace batteries when required.	
4. Remove the IYD's prior to removal of the Aft Access during CDDT.	Kit _{eres} , joint _{est} to j
5. Reminstall the IVD equipment upon completion of CDDT	
6. Monitor the outputs as in 2 above.	
7. Perove the IYD's and interconnecting cable prior to of the Aft Access Kit during Countdown.	removal
	The second secon
Here to the second of the seco	
1B	86721 and 76996 Not plicable
	MON F Chy
4 9-21-72 ACCITION OF PEAK VOLTAGE MONITOR OPERATION	MILL WI America
SEX SATE TO MICH. TO MICH. COREASON ASSESSED ASSESSED ASSESSED.	entractor Approval K&C Approval

NDAC 11. organization

LV-GDC-23

S/B D. R. JONES

APOLLO/	SATURN TEST AND OPERATIONS CATALOG (SHEET 2)	PAGE	of_2	
TEST TITLE		2. KSC TEST NUMBE	Ĺ ↔	
PEAK VO	TAGE MONITOR OPERATION AND INDUCED	V-27250		
VOLTAGE	LTAGE MONITOR OPERATION AND INDUCED DETECTOR INSTALLATION, OPERATION, AND REMOVAL			
LOCATION	14. COMPUTER PROC. INDENTIFICATION	512, 206 >8. EST. TEST TIME	:	
LC 39				
. SUPPORT REQUIRE	HKNTS			
		•	L .	
		ş		
		•		
_				
	E REFERENCE DOCUMENTATION			
S. ITEM CONTINUATIO	N PROPERTY.			
	of Auton Guidely.			
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	erform og en men men i samme klade for ett former og en som ett. Den mynde senere og former og en senere og en som ett.			
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man parties and the second			7 -	2-3	1 7/1
APOL		OPERATIONS AND OPERATIONS CATALOG	SHEET	. PAGE 1	.of2
-R035	-DC TO DC CONVER	TER SPARES CHECKOUT		V-27251	ER .
	e en vergeren a		And the second s	AS REQ.	
TEST OBJECTIV	ε\$		jese		
To v	verify the satisf	actory operation of the	DC to DC conv	erter	
		stallation in the S-II		•	
	•				
	•				
				•	
TEST DESCRIPT	ION EQUIPMENT STATUS	CONFIGURATION			
THIS TEST		NOT CONTAIN HAZARDOUS O	PERATIONS.	•	
Us1:	ng laboratory tea	t equipment, verify the	following par	ameters of	
con	verter:	territy from the constraint of		•	
1.	Accuracy of outp	ut voltage with nominal	. input voltage	•	
a 2.	Accuracy of outp	out voltage with under-v	roltage and ove	:-	
	A.S	an interest de la companya del companya del companya de la company	ada wadan basa		
3.	design load.	tability and current dr	win under neav	lest	
	atter Tall and St. Fr.				
.4.	Ripple voltage p	resent on output level.	•		
			107		
		•			
		÷			
		T	est requirement	S: N/A	
and the second of the second o		그 발전 1623 전 경기 등 162 중47 그 163 1627 전 그리고 162			
•					
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				aggi kalan ya sana.	
		and the second s			
REV. DATE	Wagh	REASON	Co	ntractor Approval	KSC Approval
CRMINGTOD'	STOOM 19/5/72	6. ORGANIZATION	9 DATE		
W. W. Robi		North American Rock	kwell	5 September	1972
NASA KSC APP		11. ORGANIZATION		ROVAL DATE	
P	Sanda Starton Land Statement Land Commence Comme			-//- 72	
د رستمب			1 /		

	grafia (n. 1944) Programa						
·				Kranikassannas	h		
-	ATURN TEST AND OPE	RATIONS CATALOG (S	HEET 2)		PAC	E2OF	2
TEST TITLE				here the second	ł	ST NUMBER	X-COMM-HANDHONDOV
-R035- DC TO	DC CONVERTER SPAR	ES CHECKOUT			a. EFFEC	7251 AS REQ.	*************
13 LOCATION	14 COMPUTER PROC. IN	DENTIFICATION			18. EST. T	EST TIME	***********
LCC, 2P10	1.	N/A		-	2	Hours	
16 SUPPORT REQUIREM	ENTS						
		_					
RF/TM L	AB, LCC, RM. 2P10	В.					
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							1.
•		•					
		*					
'- -							
17 OTHER APPLICABLE	REFERENCE DOCUMENTA	TION				*	Personal desire
MAO205- V7-7503							
18 ITEM CONTINUATION		•		moreum v	Dichery Control	ring work of the self-transfer	Оприфинента
A Description						•	
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e e						. :	

Ī	KSC OPERATIONS APOLLO/SATURN TEST AND OPERATIONS CATALOG SHEET	PAGE 1 OF 2
ļ.,	651 111-2	V-28003
P	edio Frequency System Test	SEFFECTIVITY

4. TEST OBJECTIVES

To verify performance of the RF portion of the Telemetry Checkout Equipment, including RF patching options.

STEST DESCRIPTION EQUIPMENT STATUS CONFIGURATION

LY DOES NOT CONTAIN HAZARDOUS OPERATIONS. . THIS TEST __ DOES

The following checks will be performed:

Attenuator check Multicoupler checks Preamplifier checks Receiver power supply voltage checks Receiver noise figure checks I.F. checks Second Local Oscillator checks Receiver AGC output checks Video output level checks Receiver meter checks Pre-D down-converter checks

Various patching options will also be exercised.

This procedure also contains receiver alignment sequences to be performed as required.

This procedure is perfromed prior to processing each launch vehicle.

				9-9-14	2-2-74
c 9/6/74 (ancel			Stary Dodge "	KSC Approve
PEV. DATE و PPP مان تاکید سات دید میان تاکید سات کام	DVAL 8. OF	REASON REALIZATION		ATE	
s/Steven H. Do	L-362	I-INS-12	12:	APPROVAL DATE	
s/L. C. Elanci		v-1NS-12		2-13-12	

FSC FORM 23-2388 37:671

A DOLL O'CATI	RN TEST AND OPERATIONS CA	TALOG (SHEET 2)	1	AGE 2		
The terror September 1 of the second	KN 1131 Am	the state of participation of	12 895	- EST NUMBER	F.	
TEST TITLE	t.m Toot		V-2:	B003		
Radio Frequency S	ystem rest		GSE			
1	4. COMPUTER PROC. INDENTIFICATIO	<u></u>		T. TEST TIME		
LCC 39	N/A		08	manhours		
S. SUPPORT REQUIREMENT						
LCC Telemetry Che	ckout Equipment.					
200						
er e						
	그는 생각 설명					
i wa i					-	
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17. OTHER APPLICABLE R	EFERENCE DOCUMENTATION					
18. ITEM CONTINUATION						
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KSC FORM 23-336C (7/87)

KSC OPERATIONS APOLLO/SATURN TEST AND OPERATIONS CATALOG SHEET	PAGE OF
TEST TITLE	V-28004
Frequency Modulation Discriminator Test	SSE

4. TEST COJECTIVES

To verify proper operation of the discriminator calibrators and stage module and common module discriminators.

S TEST DESCRIPTION EQUIPMENT STATUS CONFIGURATION

THIS TEST TODES TO CONTAIN HAZARDOUS OPERATIONS.

The following tests will be performed:

Calibrator output amplitude, pre-emphasis, center frequency, bandedges and linearity.

Discriminator bandedges, linearity, output level, calibrations, and light indicator operation.

This test will be performed prior to processing each vehicle.

Chiceles

C 9/6/74 Cancel	PEASON	Contractor Approval KSC Approva
s/Steven H. Lodge	B. ORGANIZATION LV-1115-12	9. DATE
s/L. C. Blanchard	LV-INS-12	12. APPROVAL DATE /-03-72

#3C FORM 23-3368 (7/ 07)

APOLLO SATURN TEST AND OPERATIONS CATALOG (SHEET 2)	FAGE -2 -0 2
1. TEST TITLE	2. KSC TEST NUMBER
Frequency Modulation Discriminator Test	V-26004
Tequency Todatation Discriminator	S. EFFECTIVITY
·	GSE
13. LOCATION 14. COMPUTER PROC. INDENTIFICATION	80 manhours
16. SUPPORT REQUIREMENTS	
LCC Telemetry Checkout Equipment.	

17. OTHER APPLICABLE REFERENCE DOCUMENTATION

18. ITEM CONTINUATION

KSC FORM 23-338C 17/871

178

** \$ * * * * * * * * * * * * * * * * *	gyfrifin affinin eres	2. KSC TEST NUMBER
Tabe Pecorder Test		V-28005
sabe Recorder (est		S. EFFECTIVITY
TEST DEVECTIVES		GSE
To verify proper operation	of Telemetry Checkout Equipm	ment tape recorders.
	me gen emilije i g	
· ·		
TEST DESCRIPTION EQUIPMENT STAT.	S CONFIGURATION	
THIS TEST TODES TODES	ES NOT CONTAIN HAZARDOUS OPERAT	FIDUS
LA, SO		
The following tests will b	e performed:	
fanctan chann	wow and flutter, and tape tr	anchart control anaration
capsean speed ,	non and reader; and cape of	unsport control operation.
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Operation of re	produce heads and amplifiers.	The state of the s
Operation of re		The state of the s
Operation of re	produce heads and amplifiers.	
Operation of re Operation of re System performa	produce heads and amplifiers. cord heads and amplifiers. nce in recording and reproduc	
Operation of re Operation of re System performa	produce heads and amplifiers.	
Operation of re Operation of re System performa Verify bi-direc	produce heads and amplifiers. cord heads and amplifiers. nce in recording and reproduc tional operation capability.	ing test signals.
Operation of re Cperation of re System performa Verify bi-direc Normal switchin	produce heads and amplifiers. cord heads and amplifiers. nce in recording and reproductional operation capability. g and patching operations wil	ing test signals.
Operation of re Cperation of re System performa Verify bi-direc Normal switchin	produce heads and amplifiers. cord heads and amplifiers. nce in recording and reproduc tional operation capability.	ing test signals.
Operation of re Cperation of re System performa Verify bi-direc Normal switchin	produce heads and amplifiers. cord heads and amplifiers. nce in recording and reproductional operation capability. g and patching operations wil	ing test signals.
Operation of re Cperation of re System performa Verify bi-direc Normal switchin	produce heads and amplifiers. cord heads and amplifiers. nce in recording and reproductional operation capability. g and patching operations wil	ing test signals.
Operation of re Cperation of re System performa Verify bi-direc Normal switchin	produce heads and amplifiers. cord heads and amplifiers. nce in recording and reproductional operation capability. g and patching operations wil	ing test signals.
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Operation of re Cperation of re System performa Verify bi-direc Normal switchin	produce heads and amplifiers. cord heads and amplifiers. nce in recording and reproductional operation capability. g and patching operations wil	ing test signals.
Operation of re Cperation of re System performa Verify bi-direc Normal switchin	produce heads and amplifiers. cord heads and amplifiers. nce in recording and reproductional operation capability. g and patching operations wil	ing test signals.

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	V. SATE	REASON	Contractor Approval KSC Approval
	Steven H. Dodge	LV-INS-12	1/03/72
15 4	ASA KEC APPACYAL	11 GRGANIZATION	12. APPROVAL DATE
s/l	L. C. Elanchard	LV-INS-12	2/22/72
- 14 7	CHARREN S		

APOLLO/	SATURN TEST AND OF	PERATIONS CAT	ALOG (SHEE	T 2)	FA	or 2	or 2	
I TEST TITLE					 V-280		ES	
Tape Recorder	Test				GSE			
LCC 39	14. COMPUTER PROC.	INDENTIFICATION	-			anhours		
16. SUPPORT REQUIRES	MENTS				 			
LCC Telemetry	Checkout Equipmen	t						
LCC TCE Magnet	ic Tape Recording							
	ing the second s							
17. OTHER APPLICABL	E REFERENCE DOCUMENT	ATION			 			
18. ITEM CONTINUATIO	N			514 59 J	 			-
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	and the second second							

KSC FORM 23-338C (7/67)

KSC OPERATIONS APOLLO/SATURN TEST AND OPERATIONS CATALOG SHEET	PAGE _1 _ OF _2
Telemetry Checkout Equipment PCM/DDAS Test	V-28008

4 TEST GBIECTIVES

To verify operational readiness of the TRS-1 Digital Receiving Stations

S. TEST DESCRIPTION EQUIPMENT STATUS CONFIGURATION

THIS TEST DOES

IX DOES NOT CONTAIN HAZARDOUS OPERATIONS.

The following checks will be performed:

Check panel meters of the power supply panel for proper voltage and current indications.

Verify proper operation of the digital signal simulator, checking clock timing, external sync output, 600 KHZ modulated output, NRZ-S data output and sync word configuration.

Using the digital signal simulator, verify proper operations of the synchronizer, correlator, data control, data switch, and output registers. Verify all bit and mode options, and verify operation of the quick-look panel meters.

Verify proper operating voltages for each D/A converter, verify proper operation of the EAC calibrator, and verify proper operation and calibration of each D/A converter.

This procedure is performed prior to processing each launch vehicle.

CANCELLE

C 9/6/74	Cancel	Alask Variable via	Store Dodge Proces
L PEV. CATE		PFASON	Contractor Approval KSC Approv
s/Steven H.		LV-INS-12	9. DATE
S/ L. C. Bla		LV-INS-12	12. APPROVAL DATE 1-31-72

SC P DRM 23-3245 (7/67)

APOLL	O'SATURN TEST AND OPERATIONS CATALOG (SHEET 2)	PAGE 2 04 2
1. TEST TITLE		2 KSC TEST NUMBER
Telemetry.Ch PCM/DDAS Tes	eckout Equipment t	V-28008 GSE
LCC39	14. COMPUTER PROC. INDENTIFICATION	40 manhours

LCC Telemetry Checkout Equipment

17. OTHER APPLICABLE REFERENCE DOCUMENTATION

18. ITEM CONTINUATION

KSC FORM 23-338C (7/67)

APOLLO CATURN 1	KSC OPERATIONS TEST AND OPERATIONS CATALOG SHEET	PAGE 1_0F 2_
TEST THTUE Telemetry Checkout Equiteediness Test		V-28009
TEST OBJECTIVES		The state of the s
Entry Patch Rack, and	DOES NOT CONTAIN HAZARDOUS OPERATIONS. 11 be performed:	
Pen Pecorder cher Tape Recorder chi Pre-D Demodulator CIF Interface Ter Test Patching TRO-1 checks	cks ecks r checks	\$ 100 mm = 1
This test will be per	formed prior to vehicle tests requiring	TCE Support.
Phase: NA.		Test Requiremnts: N
	CANCELLED	9-7-16 7.7-74
B 9/6/74	Cancel	Strong Doche Arch
OF /. DATE	RFASON 8 ORGANIZATION	Contractor Approval KSC Approv
7 -CAMBAGAGAGAPPHOVAL	LV-INS-12	
s/Steven H. Dodge		12. APPROVAL DATE
	THE RESIDENCE OF THE PROPERTY OF TAXABLE SERVICES	1 10 70
s/L. C. Blanchard	LV-INS-12	1-19-12

APOLLO SATURN TEST AND OPERATIONS CATALOG (SHEET 2)		PAGE 2 0F 2
TEST TITLE		2 KSC TEST NUMBER
	out Fouinment	V-28009
Telemetry Checkout Equipment Readiness Test		GSE
S. LOCATION	14. COMPUTER PROC. INDENTIFICATION	18. EST. TEST TIME
LCC	N/A	
S. SUPPORT REQUIREM	ENTS	
LCC Telemetry	Checkout Equipment (TCE)	
LCC TCE Magnet	ic Tape Recording	
7. OTHER APPLICABL	E REFERENCE DOCUMENTATION	
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	Fig. 1. The Tennil of the Control of	
18. ITEM CONTINUATIO		
18. ITEM CONTINUATIO		
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KSC FORM 23-336C (7/67)

-						PAGE II
A	POLLO SATE	IRN TEST AN	PERATIONS D OPERATIONS CA	TALOG SHEET	PAGE	1_0F_2
TEST TITL	.E				2. KSC TEST	NUMBER
					V-28011	
S-IC	TELEMETRY	SYSTEM SPAR	ES CHECKOUT		S. EFFECTIV	REV D.
TEST OBJE	CTIVES		The second second	والأفاد فاحتضاء	As requi	red
To veri Telemet	fy proper party System	performance spares.	and operational	readiness of	the S-IC	
		THE R. L.				
		- domei				
						· .
TEST DESC	RIPTION EQUIP	MENT STATUS CO	NFIGURATION			
THIS TES	7 DOES	XX DOES NO	T CONTAIN HAZARI	DOUS OPERATION	5. It is classed	a standby.
Prime t	est organia	ation is S-1	IC Stage	0		
all com	ponents are ed limits.	functioning	subsystems shall g properly and a	ll subsystem	parameters are v	within
F1 PAM/I A/B TM (COAXIAI MULTICO	FM T/M Assy Calibrator L SWITCH DUPLER MINATION	RDSM, Model . and RF Ass and DC Isola			Test Requirement	<u>ts</u>
F1 PAM/I A/B TM (COAXIAT MULTICO RF TERM	FM T/M Assy Calibrator L SWITCH DUPLER MINATION	. and RF Ass	sy.		Test Requirement	ts (hand
F1 PAM/I A/B TM (COAXIAI MULTICO RF TERM POWER D	FM T/M Assy Calibrator J. SWITCH DUPLER IINATION DIVIDER	. and RF Ass	sy.		Test Requirement	Ses Jahren
F1 PAM/A/B TM (A COAXIAN MULTICO RF TERM POWER I	FM T/M Assy Calibrator L SWITCH UNDFLER GINATION DIVIDER 9-70 ADDI: Change	and RF Ass and DC Isola ION OF SPARI	E ITEMS FOR TEST	os to As	Test Requirement	14 Japhulan
F1 PAM/A/B TM (A COAXIAN MULTICO RF TERM POWER I	FM T/M Assy Calibrator L SWITCH DUPLER MINATION ILVIDER 9-70 ADDI: Change 3/9 Requir. 4/9 Delete: they a: S1 Mo:	ION OF SPARI deffectivity def. Removed it he follow re not required: 245 MUX. ddel 245 MUX.	E ITEMS FOR TEST y from 503 & Sut items not applic ing portions of red after AS-50: SS/FM TM and To, SS/FM TM and To,	bs to As cable to 506 the test become	Test Requirement MSFC: NA Son. Busse & RF Assy	19 Jahran
FI PAM/A/B TM (COAXIAT MULTICO RF TERM POWER I	FM T/M Assy Calibrator L SWITCH UDFLER MINATION DIVIDER 9-70 ADDI: Change 3/9 Requir. 4/9 Delete they a: \$1 Mod \$2 M \$2 P,	ION OF SPARE d effectivity c. Removed the follow ne not requi- icl 245 MUX. M/FM T/M Ass	E ITEMS FOR TEST y from 503 & Subitems not applicing portions of red after AS-505 SS/FM TM and Tc, SS/FM TM and Tsy and RF Assy	bs to As cable to 506 the test become	Test Requirement MSFC: NA Son. Busse & RF Assy	19 Johnson
FI PAM/A/B TM (COAXIAT MULTICO RF TERM POWER I	FM T/M Assy Calibrator J SWITCH JUPLER (INATION JIVIDER 9-70 ADDI: Change (3/9 Requir 4/9 Delete they a: \$1 Mor \$2 Mr FZ P. F3 P.	ION OF SPARI d effectivity ed. Removed d the follow re not required 1245 MUX. MM/FM T/M Ass MM/FM T/M Ass	E ITEMS FOR TEST y from 503 & Subitems not applicing portions of red after AS-505 SS/FM TM and To, SS/FM TM and To, SS/FM TM and To, SS/FM TM and RF Assy y and RF Assy	bs to As cable to 506 the test because the test because the case to be called the case the ca	Test Requirement MSFC: NA Son. Busse & RF Assy	S/L.C.
FI PAM/A/B TM (COAXIAT MULTICO RF TERM POWER I	FM T/M Assy Calibrator J SWITCH JUPLER (INATION JIVIDER 9-70 ADDI: Change (3/9 Requir 4/9 Delete they a: \$1 Mor \$2 Mr FZ P. F3 P.	ION OF SPARE d effectivity c. Removed the follow ne not requi- icl 245 MUX. M/FM T/M Ass	E ITEMS FOR TEST y from 503 & Subitems not applicing portions of red after AS-505 SS/FM TM and To, SS/FM TM and To, SS/FM TM and To, SS/FM TM and RF Assy y and RF Assy	bs to As cable to 506 the test because the test because the case to be called the case the ca	Test Requirement MSFC: NA Son. Share & RF Assy & RF Assy & Jack Smith D.M. Vevera	Ja Jahran
FI PAM/A A/B TM (COAXIAN MULTICO RF TERM POWER D 1- C 5/2 B 1/1	PM T/M Assy Calibrator L SWITCH UDPLER MINATION IVIDER Grange 3/9 Requir 4/9 Delete they a: \$1 Mor \$2 Mr \$2 Pr \$4/8 T	ION OF SPARI d effectivity ed. Removed d the follow re not required 1245 MUX. MM/FM T/M Ass MM/FM T/M Ass	E ITEMS FOR TEST y from 503 & Sut items not applic ing portions of red after AS-505 SS/FM TM and To , SS/FM TM and To , SS/FM TM and To y and RF Assy y and RF Assy r	bs to As cable to 506 the test because the test because the case to be called the case the ca	Test Requirement MSFC: NA Son. Sylvanian Son	5-2376 27 Sintan

BATC 5-8521/5-8531

LV-INS-12

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s/H.L.Burton/J.S.Clements

KSC FORM 23-338 (7/87)

priestera in a	record relations with 1980 to 1 and 1	PAGE III
APOLLO/S	ATURN TEST AND OPERATIONS CATALOG (SHEET 2)	PAGE 2 OF 2
. TEST TITLE .		2. KSC TEST NUMBER V-28011
S-IC TELEMET	TRY SYSTEM SPARES CHECKOUT	As Required
LCC LCC	14. COMPUTER PROC. INDENTIFICATION	18. EST, TEST TIME 24 Hrs.
S. SUPPORT REQUIREME		24 1150
Timing LCC Telemetry LCC TCE Recor	Checkout Equipment	
RF Clearance	ling	THE PARTY OF THE P
	7 12 00 7 1 N	
	RF 0 A T	The state of the Park
	SE 0 7 1	
	SE 0 7 3 - 97	
7. OTHER APPLICABLE	7 1 1 1	
7. OTHER APPLICABLE	REFERENCE DOCUMENTATION	
7. OTHER APPLICABLE	7 1 1 1	
	7 1 1 1	
	7 1 1 1	
	7 1 1 1	
	7 1 1 1	
	7 1 1 1	
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	7 3 3 3	
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7. OTHER APPLICABLE	7 3 3 3	
	7 3 3 3	
	7 3 3 3	

APOLLO SATURN TEST AND OPERATIONS CATALOG SHEET	PAGE1_ OF2_
TEST TITLE	2. KSC TEST NUMBER V-28054
C-BAND TRANSPONDER BENCH TEST (STANDBY)	AS REQUIRED
YEST DBJECTTLES	
E. CONFIRM FLIGHT READINESS OF FLIGHT C-BAND	
	·
TEST CROSS ATION EQUIPMENT STATUS CONFIGURATION	and the same of the same of
THIS TEST DOES XX DOES NOT CONTAIN HAZARDOUS OPERATIONS.	The state of the state of
TRANSPONDER AND THE C-BAND TES POWER OUTPUT WILL BE MEASURED METER. RECEIVER SENSITIVITY WI DECREASING THE SIGNAL LEVEL IN TO THE POINT OF COUNTDOWN. REC CENTER FREQUENCIES AND RECEIVE MEASURED WITH THE USE OF A FREI TIME WILL BE MEASURED BY INTRO INTERROGRATION PULSES AND MEAS GROUPS OF PULSES CAN BE AND THE REPLY TO BOTH GROUPS. PULSE SH. PULSE CODE SPACING WILL BE MEAST THE DETECTED PULSE OUTPUTS ON ALL TELEMETRY OUTPUTS WILL BE IN DIFFERENT PRF'S AND INPUT SIGN. CIRCUITRY WILL BE CHECKED BY II NO REPLIES WHILE THE TRANSPONDE RANDOM TRIGGERING WILL BE OBSE! (CCC.T. BLOCK 5) TEST REQUIREM MSFC: 792160 0.3.2.	BY THE USE OF A POWER LL BE MEASURED BY PUT TO THE TRANSPONDER EIVER AND TRANSMITTER R BANDWIDTH WILL BE QUENCY COUNTER. RECOVERY DUCING A SECOND PAIR OF URING HOW CLOSE THE TWO E TRANSPONDER STILL APE, DELAY TIME AND SURED BY OBSERVING AN OSCILLOSCOPE. MEASURED BY INTRODUCING AL LEVELS. THE INHIBIT NSURING THAT THERE ARE ER IS INHIBITED. ANY RVED. ENTS 1 1 1-1 1-1 1-1 1-1 1-1 1-1 1-1 1-1 1-
D 3-6-14 PEVISED MSFC REQUIREMENTS	M7/100 31032M
C 5-23-9 REVISE MSFC REQUIREMENTS	1 x 3 my 86 200 700
B 5-3-8 CHANGE EFFECTIVITY TO STANDBY A 2-14-9 CHANGE EFFECTIVITY TO STANDBY	S/R. GOULD S/ J.BIZZEL
A 12-1- STANDBY	6 11 0 11 11 11 11 11
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. APOLLO SATURN TEST	AND OPERATIONS CATALOG (SHEET 2)	PAGE _2 OF _2
I. TEST TITLE		2 MSC TEST NUMBER
A STATE OF THE REAL PROPERTY.		V-28054
C-BAND TRANSPON	DER BENCH TEST (STANDBY)	AS REQUIRED
13. LOCATION 14 COMPUT	ER PROC. INDENTIFICATION	AS REQUIRED
/AB,26E7/26B7	N/A	1 MAN - 4 HOURS
6. SUPPORT REQUIREMENTS		
RD 41460		
The state of the s		
INTERSTAGE:	N/A	
OFF-COMPLEX:	FREQUENCY CLEARANCE FOR 5690 &	5765 MHZ.
1. n. 126 id 200 7 700 6.	The second	The state of the s
ON-COMPLEX:	QAI	2 10 10 10 10 10 10 10 10 10 10 10 10 10
		1 */
		66-4020)
C-BAND RADAR TR	COCUMENTATION CANSPONDER SET SST-135C, (66-9)	- 66-J020)
OTHER APPLICABLE REFERENCE OF C-BAND RADAR TR		- 66-J020)
C-BAND RADAR TR	ANSPONDER SET SST-135C, (66-9	001
C-BAND RADAR TR	C-BAND BREAKOUT BOX, 67-967- C-BAND RF CHECKOUT STATION # P/N 63E900373G1, S/N 1 P/N 63E900375G1, S/N 1 P/N 63E900375G1, S/N 1	001 1 ROOM 26E7:
C-BAND RADAR TR	C-BAND BREAKOUT BOX, 67-967- C-BAND RF CHECKOUT STATION # P/N 63E900373G1, S/N 1 P/N 63E900375G1, S/N 1 P/N 63E900375G1, S/N 1 C-BAND RF CHECKOUT STATION: # (ALTERNATE) P/N 63E900376G1, S/N 1	001 1 ROOM 26E7:
C-BAND RADAR TR	C-BAND BREAKOUT BOX, 67-967- C-BAND RF CHECKOUT STATION # P/N 63E900373G1, S/N 1 P/N 63E900375G1, S/N 1 P/N 63E900375G1, S/N 1 C-BAND RF CHECKOUT STATION: # (ALTERNATE) P/N 63E900377G1, S/N 1	001 1 ROOM 26E7:
C-BAND RADAR TR	C-BAND BREAKOUT BOX, 67-967- C-BAND RF CHECKOUT STATION # P/N 63E900373G1, S/N 1 P/N 63E900375G1, S/N 1 P/N 63E900375G1, S/N 1 C-BAND RF CHECKOUT STATION: # (ALTERNATE) P/N 63E900376G1, S/N 1	001 1 ROOM 26E7:

KSC OPERATIONS PAGE 1 OF 2 APOLLO SATURN TEST AND OPERATIONS CATALOG SHEET TEST TITLE VSC TEST NUMBER V-28055 -- . IU RADAR CLOSED LOOP TEST S. MPPECTIVITY 206 & SUBS 503 & SUBS

A TEST OBJECTIVES

TO VERIFY COMPATIBILITY OF THE RADAR TRANSPONDER WITH THE AIRBORNE IU SYSTEMS AND ESTABLISH FLIGHT READINESS OF THE RADAR AIRBORNE SYSTEM.

5 TEST DESCRIPTION EQUIPMENT STATUS CONFIGURATION

THIS TEST TO DOES DOES NOT CONTAIN HAZARDOUS OPERATIONS.

TEST EQUIPMENT: LAUNCH COMPLEX 39 RF TRANSMISSION LINKS, DRAWING NO. 203-434.

RF CHECKOUT STATION #1, RM. 26E7, COMPOSED OF:

P/N 63E900373G1, S/N 1 P/N 63E900374G1, S/N 1 P/N 63E900375G1, S/N 1

RF CHECKOUT STATION #2; RM. 2687, COMPOSED OF THE FOLLOWING:

P/N 63E900376G1, S/N 1 P/N 63E900377G1, S/N 1 P/N 63E900378G1, S/N 1

DESCRIPTION:

AFTER POWER IS APPLIED AND THE PROPER WARMUP TIME OBSERVED, SIGNALS WILL BE SENT BETWEEN THE RADAR TRANSPONDER IN THE IU AND THE RADAR TEST SET IN THE RF LAB. POWER OUTPUT WILL BE MEASURED BY THE USE OF AN RF POWER METER. RECEIVER SENSITIVITY WILL BE MEASURED BY DECREASING THE SIGNAL LEVEL INPUT TO THE TPANSPONDER UNTIL COUNTDOWN OCCURS. RE-CEIVER AND TRANSMITTER CENTER FREQUENCIES AND RESEIVER BANDWIDTH WILL BE MEASURED WITH THE USE OF A FREQUENCY COUNTER. RECOVERY TIME WILL BE MEASURED BY INTRODUCING A SECOND PAIR OF INTERPOGATION PULSES AND MEASURING HOW CLOSE THE TWO GROUPS OF PULSES CAN BE AND THE TRANSPONDER STILL REPLY TO BOTH GROUPS. PULSE SHAPES, DELAY TIME AND PULSE CODE SPACING WILL BE MEASURED BY OBSERVING THE DETECTED PULSE OUTPUTS ON AN OSCILLOSCOPE. ALL TELEMETRY OUTPUTS FROM THE RADAR TRANSPONDER WILL BE CHECKED AND CALIBRATED. THE INHIBIT CIRCUIT WILL BE TESTED BY ATTEMPTING TO INTERROGATE THE TRANSPONDERS AND MONI-TORING FOR REPLYS WITH THE INHIBIT APPLIED. ANY RANDOM TRIGGERING WILL BE OBSERVED AND RECORDED.

CONFIGURATION:

IN LOCATED IN VAB IN ERECTED POSITION; IN COOLING AND POWER ON; RF CLEARANCE FOR CLOSED LOGS CHERATION. 5690 & 5765 MHZ; ANTENNA COUPLER AND TRANSMISSION SYSTEM CONNECTED TO TU RADAR ANTENNA: TEST PROCEDURES V-28053 AND V-28059 (S-V) OR V-28227 ALC V-28228 (SL-2) MUST BE COMPLETE PRIOR TO START OF THIS TEST. (CONT-18)

REV. DATE	REASON	Contractor Approval KSC App	prova
S/ R. H. GOULD	BM - 967	19 SEPTEMBER .1967	-
Marriel	II. DRGANIZATION -	12. APPROVAL DATE	
SPJ. S. B. ZIELL	LV-INS-II	26 SEPTEMBER 1967	

APOLLO SATURN TEST AND OPERATIONS CATALOG (SHEET 2)		PAGE 2 OF 2	
I. TEST TITLE		V-28055	
IU RADAR C	LOSED LOOP TEST	3. EFFECTIVITY 206 8 SUBS	
VAB 26E7/26B7	14. COMPUTER PROC. INDENTIFICATION N/A	1 MAN - 4 HOURS	

INTERSTAGE:

N/A

OFF-COMPLEX:

FREQUENCY CLEARANCE FOR 5690 & 5765 MHZ

ON-COMPLEX:

18. ITEM CONTINUATION

GROUND POWER, IU POWER, FACILITY COMMUNICATIONS (OIS), DOAS, RCA 110A,

IBM MEASURING, QUALITY INSPECTOR

17 OTHER APPLICABLE REFERENCE DOCUMENTATION

IBM DOCUMENT #66-966-008, C-BAND RADAR TRANSPONDER SET SST-135C

TEST REQUIREMENTS

PHASE: III	TEST R	EQUIREMENTS	
Libert State	MSFC:	7921601	
and the state of t		0.3.2.4.2.3.1.4 0.3.2.4.2.5 0.3.2.4.2.1.1.1	0.3.2.4.2.2.1.3 0.3.2.4.2.2.1.4 0.3.2.4.2.2.1.5
		0.3.2.4.2.1.1.2	0.3.2.4.2.2.1.6
		0.3.2.4.2.1.1.4	0.3.2.4.2.3.1.1
		0.3.2.4.2.2.1.1	0.3.242313

B				S/J. BIZZELL
-	1/12/70	REVISE BLOCK 16	S/R. GOULD	S/J. SIZZELL
С	11/23/0	REVISE MSFC REQ'MTS	S/J. WASHBURN	S/J. BIZZELL
D	5/9/72	UPDATE FOR SL-2 EFFECTIVITY	18 Whilliam	(Stage)
E	9/6/74	REVISED MSFC REQUIREMENTS	March	SARTIN
10	199 5			to historia
				THE

MSC OPERATIONS CATALOG SHEET	PAGE OF
. TEST TITLE	V- 28056
IU RADAR OPEN LOOP TEST	512 & 514

- VERIFY COMPATIBILITY OF THE AIRBORNE RADAR SYSTEM WITH THE EASTERN TEST RANGE RADAR INTERROGATION SYSTEMS.
- VERIFY THE ABILITY OF THE GSE IN THE VA. TO INTERROGATE AND MONITOR THE III RADAR.

TEST DESCRIPTION EQUIPMENT STATUS/CONFIGURATION

THIS TEST TOOES

DOES NOT CONTAIN HAZARDOUS OPERATIONS.

TEST EQUIPMENT

- LAURCH COMPLEX 39 RF TRANSMISSION LINKS, DWG. NO. 203-434.
- RF CHECKOUT STATION NO. 1, RM. 26E7, COMPOSED OF THE FOLLOWING: P/N 63C511294.
- RF CHECKOUT STATION NO. 2, RM. 26B7, COMPOSED OF THE FOLLOWING, MAY BE USED AS AN ALTERNATE: P/N 63C511294.

DESCRIPTION

THE TRAISPONDER IS CONNECTED IN THE OPEN LOOP CONFIGURATION. POWER IS APPLIED ALD THE FOLLOWING PARAMETERS ARE MEASURED BY THE ETR RADARS:

KECEIVER & TRANSMITTER CENTER FREQ. PULSE WIDTH

BALANCE STITTER

BEACON DELAY SIGNAL STRENGTH

COUNT DOWN

PULSE SPACING (CODING)

THE TPA: SPONDER WILL BE OPERATED IN THE OPEN LOOP CONFIGURATION RADIATING THRU THE MSS PASSIVE REPEATER SYSTEM. THE RADAR GSE LOCATED IN ROOM 26E7 OR 26B7 WILL BE USED TO INTERROGATE THE TRANSPONDERS AND VERIFY PROPER OPERATION.

THE FOLLOWING PARAMETERS WILL BE CHECKED: PULSE SPACING, RECEIVER AND TRANS-MITTER CENTER FREQUENCY, PULSE CHARACTERISTICS, PULSE DELAY, BEACON RECEIVER SEISTIVITY AND TRANSMITTER POWER , AND INHIBIT.

PHASE: 111, V8, VI

SC FORW 22 330 17 67.

RECOVERY TIME

TEST REQUIREMENTS SEE BLOCK 18

(CONTINUED IN BLOCK 18)

SEE CONT	INUATION SHEET FOR REVISION HIS	STORY	Tr La
6 DEV. DATE	REASON	Contractor Approval	KSC Approval
7 CONTRACTOR APPROVAL S/ R. H. GUULD	BM - 967	OCTOBER 10,	1969
S/ J. BIZZELL	LV-INS-11	OCTOBER 18,	1969

APOLLO/SA	TURN TEST	AND OPERATION	S CATALOG	SHEET	2) ,	1	PAGE 2 OF 3
1. YEST TITLE				12			V-28056:
IU RADAR, C	OPEN LOOP T	EST		a			3. EFFECTIVITY 205 & SUE 512 & 514
VAB 26E7/26B7	14. COMPUTER	R PROC. INDENTIFE	CATION .	1			2 MEN 4 HOURS

16. SUPPORT HEQUIREMENTS

INTERSTAGE:

RANGE RADAR READOUT. OFF-COMPLEX:

FREQUENCY CLEARANCE FOR 5690 AND 5765

MHZ OPEN LOOP.

GROUND POWER, IU POWER, FACILITY OIS, DDAS, RCA 110A, IBM MEASURING ON-COMPLEX:

AND IBM QUALITY INSPECTOR.

17. OTHER APPLICABLE REFERENCE DOCUMENTATION

C-BAND RADAR TRANSPONDER SET SST-135C, IBM DOCUMENT NO. 66-966-0008

B. ITEM CONTINUATION

(CONTINUED FROM BLOCK 5)

CONFIGURATION

VEHICLE LOCATED ON MOBILE LAUNCHER AT PAD 39A OR 39B, WITH MSS IN PLACE; IU COOLING AND POWER ON; ANTENNA COUPLER AND MSS ANTENNA SYSTEM CONNECTED TO IU RADAR-ANTENNA; TEST PROCEDURES V-28053, V-28059 AND V-28055 COMPLETE/V-28228, V-28055 AND V-28227

	REQUIREMENTS SAT I	.0
local in a	0.3.2.4.2	0.3.2.4.2.3
gov cer	0.3.2.4.2.1	0.3.2.4.2.3.1
	0.3.2.4.2.1.1	0.3.2.4.2.3.1.1
ed 821	0.3.2.4.2.1.1.1	0.3.2.4.2.3.1.3
	0.3.2.4.2.1.1.2	0.3.2.4.2.3.1.4
	0.3.2.4.2.1.1.3	0.3.2.4.2.4
	0.3.2.4.2.1.1.4	0.3.2.4.2.4.1
	0.3.2.4.2.2	0.3.2.4.2.5
	0.3.2.4.2.2.1	0.3.2.4.2.3.1.2
8 V	0.3.2.4.2.2.1.1	
	0.3.2.4.2.2.1.2	
	0.3.2.4.2.2.1.3	
	0.3.2.4.2.2.1.4	
	0.3.2.4.2.2.1.5	
	0.3.2.4.2.2.1.6	

	TITLE	TEST AND OPERATIONS CATALOG SHEET (CONTINU.	ATION SHEET)		PAGE 3 OF 3	
		P. OPEN LOOP TEST		V-28	-28056	
EM C	CONTINUATIO	NO.			512 & 514	
R	EVISIO: H	ISTORY I				
A	3/23/68	MCDIFY BLOCK 5	S/R. GOULD		S/J. BIZZELL	
В	5/23/69	REVISE MSFC REQUIREMENTS	S/R. GOU	LD	S/J. BIZZELL	
С	11/4/89	PEVISE BLKS. 5, 16, 18 & MSFC REQ'MTS	S/R. GOU	ம	S/J. BIZZELL	
D	11/23/0	REVISE MSFC REQUIREMENTS	S/J. WASI		S/J. BIZZELL	
Ε	5/10/2	REVISE BLK. 5, MSFC REQ'MTS, CHG. EFF.	\$8.WW	Liber	95055	
F	10/5/72	REVISE EFFECTIVITY	fews:	lan	10-12-72	
3	3/5/74	REVISED MSFC REQUIREMENTS	Miller	12	9-1-74	
	Hab 4	p. 4 /20012. Independent		Sart I		
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	TRANS	Clear to the regulation for Little and The				
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-16 FORM 23-330A -7 .07/

Winday

KSC OPERATIONS APOLLO/SATURN TEST AND OPERATIONS CATALOG SHEET	PAGE _1_OF _2_
IU RF SYSTEM SUPPORT .	Z. KSC TEST NUMBER V-28069
Activities and the second	503 & SUBS

4 TEST DELECTIVES

ESTABLISH A PROCEDURE FOR VERIFYING AIRBORNE HARDWARE OPERATION WHEN REQUIRED TO SUPPORT OTHER LAUNCH VEHICLE TESTING.

S TEST LESCRIPTION EQUIPMENT STATUS CONFIGURATION

THIS TEST __ DOES

IX DOES NOT CONTAIN HAZARDOUS OPERATIONS.

TEST EQUIPMENT:

COMMAND COMMUNICATIONS SYSTEM TEST SET P/N

01-26719H02 S/N2 OR S/N5

C-BAND RF CHECKOUT STATION RACKS 10, 11, 12

RM 26E7.

P/N 63E900 373G1 S/N1 P/N 63E900 374G1 S/N1

P/N 63E900 375G1 S/N1

.C-BAND RF CHECKOUT STATION RACKS 13. 14, 15.

P/N 63E900 376G1 S/N1 P/N 63E900 377G1 S/N1 P/N 63E900 378G1 S/N1

COMMAND SIMULATOR

P/N 511091G4 - S/N 012 OR S/N 014

LUANCH COMPLEX 39 RF TRANSMISSION LINKS

DRAWING #203-434.

DESCRIPTION:

A SET OF INSTRUCTIONS FOR GROUND SUPPORT EQUIP.
SET-UP AND QUICK LOOK EVALUATION OF THE OPERATION
OF CCS, & C-BAND AIRBORNE EQUIPMENT IS PROVIDED.
C-BAND AIRBORNE EQUIPMENT IS TESTED EITHER BY
THE GSE OR ETR OR COMBINATION OF BOTH AS REQUIRED
BY THE INTEGRATED TCP. CCS AIRBORNE EQUIPMENT IS
TESTED EITHER BY THE GSE OR USB STATION OR COMBINATION

OF BOTH AS REQUIRED BY THE INTEGRATED TCP.

PHASE:

III, IV. VA. VB. VI

(CONTINUED IN BLOCK 18)

C REQUIREMENTS	Elibrilly	12-16-70
REQUIREMENTS	1 W.S. id	5:54-69
REASON	Contractor Approval	KSC Approval
8. ORGANIZATION	9 DATE ,	
IBM - 967	22 NOVEMBER 196	7
11. ORGANIZATION	12. APPROVAL DATE	
LV-INS-11	11-29-67	
	8. GRGANIZATION IEM - 967 11. ORGANIZATION	REQUIREMENTS REASON Contractor Approval B. ORGANIZATION 1EM - 967 11. ORGANIZATION 12. APPROVAL DATE

APOLLO	SATURN TEST AND OPERATIONS CATALOG (SHEET 2)	PAGE	
SYSTEM SUPPORT		2. KSC TEST NUMBER	
I) Kr STSTEM	SOPPORT	S. EFFECTIVITY	
		503 & SUBS	
	14. COMPUTER PROC. INDENTIFICATION	18. EST. TEST TIME	
13 LOCATION	THE COMP OF LINE THE PARTY OF T		

15 SUPPORT REQUIREMENTS

-FD 41460

INTERSTAGE REQUIREMENTS:

OFF-COMPLEX:

RF CLEARANCE FOR 2101, 2282, 5690, 5765 MHZ ETO READOUT

OF C-BAND BEACONS. USB READOUT OF CCS.

JN-COMPLEX:

IU POWER AND COOLING, IBM QUALITY INSPECTOR. OIS, DDAS,

IU TELEMETRY, IU MEASURING.

17. (THER APPLICABLE REFERENCE DOCUMENTATION

TICHNICAL MANUALS FOR: COMMAND DECODER, IBM 66-699-0019; CCS P.A., IBM 67-699-0002; CCS TRANSPONDER, 67-699-0003; C-BAND 66-966-0020.

((ONTINUED) BLOCK 5

DESCRIPTION:

THE TEST MAY BE IN THE VAB OR AT PAD A OR B.

CONFIGURATION:

COMMAND AND COMMUNICATIONS SYSTEM, C-BAND SYSTEM,

BOTH GSE AND AIRBORNE CONNECTED AS REQUIRED TO

SUPPORT INTEGRATED TEST.

TEST REQUIREMENTS

MSFC: 7916404 (504 & SUBS) 0.3.2.4.1 0.3.2.4.2.5

13. DCK 13

LATION: VAB, 26E7, 26B7, PAD A OR PAD B.

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KSC OPERATIONS APOLLO SATURN TEST AND OPERATIONS CATALOG SHEET	PAGE 1 0F 2
TM MOBILE LAUNGHER GSE READINESS TEST	V-28070
	* KFFFCTIVITY

A TEST CBJECTIVES

To verify readiness of the Mobile Launcher Telemetry, RF, and DDAS closed loop. coaxial cables; and verify patching and proper operation of the attenuator and passive combiner.

TEST CESCRIPTION EQUIPMENT STATUS CONFIGURATION

THIS TEST DOES TO DOES NOT CONTAIN HAZARDOUS OPERATIONS.

Mobile Launcher DDAS cables for each stage will be tested for continuity and attenuation, and tested by time domain reflectometer.

Closed loop IMVAF cables for each stage will be tested for continuity, attenuation, and VSWR, and also by time domain reflectometer.

The attenuator and passive combiner will be tested for insertion loss and proper operation.

ECAS cables between the Firing Room and the TCE and lines from the TCE to the . Retransmission Room (2P12) will be tested by Time Domain Reflectometer.

An end-to-end calibration of the DDAS cable and associated line driver will be performed for each stage. Line driver calibration curves may be generated from this data.

2 -9/8/74 Frocedure changes is	revision for ASTP to incorpo	rate Stown Dolge 1993-14
C DEV CATE	REASON	Contractor Approval KSC Approval
s/Steven H. Dodge	LV-1115-12	9. DATE
s/L. C. Flanchard	LV-INS-12	12. APPROVAL DATE 4-10-72

THE TITLE THE LAUNCHER GSE READINESS TEST A COMPUTER PRIOR INDESTRUCTION 15. COMP	APOLLO/SATURN TEST AND OPERATIONS CATALOG (SHEET 2)	PAGE 2 0F 2
S. PRECEIVET GSF S. LOCATION 14. COMPUTER PROC. INDENTIFICATION 15. EST. TEST TIME 80 manhours Telemetry Checkout Equipment ESE DDAS Facility Power 400 KHZ Ground Power Stage Contractor QC Boeing Networks 015 Communications 7. OTHER APPLICABLE REPEABNCE COCUMENTATION 8. ITEM CONTINUATION	. TEST TITLE	
S. LOCATION 14. COMPUTER PROC. INDENTIFICATION 19. EST. TEST TIME 80 manhours 6 SUPPORT REQUIREMENTS Telemetry Checkout Equipment ESE DDAS Facility Power 400 KHZ Ground Power Stage Contractor QC Boeing Networks OIS Communications 7. OTHER APPLICABLE REPERENCE COCUMENTATION 8. ITEM CONTINUATION	TM MOBILE LAUNCHER GSE READINESS TEST	
15. COMPUTER PROC. INDENTIFICATION 15. COMPUTER PROC. INDENTIFICATION 15. EST. TEST TIME 80 manhours Telemetry Checkout Equipment ESE DDAS Facility Power 400 KHZ Ground Power Stage Contractor QC Boeing Networks 015 Communications 7. OTHER APPLICABLE REFERENCE COCUMENTATION 8. ITEM CONTINUATION		
Telemetry Checkout Equipment ESE DDAS Facility Power 400 KHZ Ground Power Stage Contractor QC Boeing Networks OIS Communications 7. OTHER APPLICABLE REFERENCE DOCUMENTATION 6. ITEM CONTINUATION		
Telemetry Checkout Equipment ESE DDAS Facility Power 400 KHZ Ground Power Stage Contractor QC Boeing Networks OIS Communications 7. OTHER APPLICABLE REFERENCE DOCUMENTATION 8. ITEM CONTINUATION		80 manhours
ESE DDAS Facility Power 400 KHZ Ground Power Stage Contractor QC Boeing Networks OIS Communications 7. OTHER APPLICABLE REFERENCE DOCUMENTATION 6. ITEM CONTINUATION	6 SUPPORT REQUIREMENTS Tolomotry Chackout Fauinment	
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Stage Contractor QC Boeing Networks OIS Communications 7. OTHER APPLICABLE REFERENCE DOCUMENTATION 6. ITEM CONTINUATION	Facility Power	
Boeing Networks OIS Communications 7. OTHER APPLICABLE REFERENCE DOCUMENTATION 6. ITEM CONTINUATION		
7. OTHER APPLICABLE REFERENCE DOCUMENTATION 8. ITEM CONTINUATION	Stage Contractor QC	
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KSC FORM 23-338C (7-67)

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AFOL	KSC OPERATIONS LD SATURN TEST AND OPERATIONS CATALOG SHEET	PAGE _] OF 2
STATES! TITLE		V-28150
Telemetry,	checkout Ecuipment Trankforance vest	3. EFFEGTIVITY
Tarichani sa		 GSE

To provide preventive maintenance and cleaning of the Telemetry Checkout Equipment and associated auxillary equipment; provide for removal and reinstallation of the LCC roof antennas in accordance with the KSC Hurrican Plan.

S TEST LESS FORTIGHE EQUIPMENT STATUS CONFIGURATION

TO DOES HOT CONTAIN HAZARDOUS OPERATIONS. THIS TEST () SOTS

The following steps will be accomplished:

Clean all racks and filters to remove dust, dirt, or lint.

Remove equipment filters, clean, dry, and reinstall.

Lubricate all fans, blowers, and motors requiring periodic lubrication.

Visually check the physical condition of all equipment and connectors.

		1 2 2 24 1 2 7-9-7-1
C 9/6/74 Cancel		Steven Dodge Branche
C DEV DATE	PEASON	Contractor Approval KSC Approval
s/Steven H. Dodge	LY-INS-12	9. DATE
s/L. C. Manchard	LV-INS-12	2 -29-72

APOLLO/SAT	URN TEST AND OPERATIO	NS CATALOG (SHEET 2)	P	AGE _2 07 _2_	
TEST TITLE	•		7 537	8150	
Telemetry Checkon Mechanical Mainte	ut Equipment enance Test		GSE	YT(V) 75 3	
LCC	14. COMPUTER PROC. INDENTIS	FICATION		manhours	-
6. SUPPORT REQUIREMEN	TS				
LCC Telemetry Ch	eckout Equipment		•		
	o para di salah				
17. OTHER APPLICABLE F	REFERENCE DOCUMENTATION				
学数学					
18. ITEM CONTINUATION					
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		11 11 11 11 11 11			
	46				

KSC OPERATIONS APOLLO SATURN TEST AND OPERATIONS CATALOG SHEET	PAGE 1 OF 2
APOLLO SALSALS	2 MSC TEST NUMBER V-28152
DAS PREVENTATIVE MAINTENANCE	GSE 39 A,B,C
SULL CTIVES	
O PROVIDE INSTRUCTIONS FOR PERFORMANCE OF PREVE AINTANANCE ON THE DDAS SYSTEM.	NIAIIVE
C. C. L. ST IN EQUIPMENT STATUS CONFIGURATION	
CONTAIN HATARDOUS OPERATIONS.	
TEST DOES X DOES NOT CONTAIN HAZARDOUS OPERATIONS.	
THIS PROCEDURE CONTAINS INSTRUCTIONS FOR PERIOD FHYSICAL INSPECTION, ELECTRICAL CHECKOUT, AND A NECESSARY TO INSURE RELIABLE OPERATION OF THE D	IC CLEANING, DJUSTMENT DAS SYSTEM.
	ICH MAY BE
	AN APPENDIX SECTION IS FO
PLUIAL BLEADING AND MECHANICAL PIN PUSH CHECKS.	
1. THENTHEY/400 HRAND IN THE CHARLES OF THE	
7. NUASTERLY/1200 HR. 3. SEMI-ANTOUALLY/2400 HR.	
The rest of the register and whole providing made	in the second of
• 그 아이는 말이 아니라 아이를 하는 것 같아요.	
2.4.51 1.4.4 1.51 1.51 1.51 1.51 1.51 1.5	TEST REQUIREMENTS
	TEST REQUIREMENTS
and the control of t The control of the control of	MSFC: NONE
-2777 -271810 3LOOK 16	1 2 8 1/1 / 4 2 13 11 En 20
1.5-9/-52	11. 2. 1. (41) Crack
V CATE REASON	Contractor Approval SEC Ans
REASON A CLANICATION 1BM 968	

APOLLO SATURN TEST AND OPERATIONS CATALOG (SHEET 2) TEST TITLE V4251 DOAS PREVENTATIVE MAINTENANCE LC-39 The property of the IS SUPPORT REQUIREMENTS 1. INTERSTAGE REQUIREMENTS: NONE 2. OFF COMPLEX SUPPORT: NONE A. GROUND POWER 3. ON COMPLEX SUPPORT: B. DDAS C. RCA 110-A D. CSO-CLEAN FILTERS E. IBM QAL TOTHER APPLICABLE REFREENCE ESCHMENTATIEN V-28185-GSE THROUGH V-28002 - CSE 11, CLUSIVE VENDORS MANUAL, VR3600 MAGNETIC TAPE RECORDER.

KSC FORM 23-338C (7/87)

KSC OPERATIONS	
APOLLO/SATURN TEST AND OPERATIONS CATALOG SHEET	PAGE 1 OF 2
TEST TITLE G124	2. KSC TEST NUMBER
TELEMETRY CHECKOUT EQUIPMENT	V-28182
PRE_EMPHASIS TOLERANCE TEST	GSE/506 & subs
TEST OBJECTIVES	y aya kaba gadaanay.
 To establish FM channel pre-emphasis meter To establish/verify TMI pre-emphasis curve To establish BPIF output voltage tolerance To establish pre-emphasis DC voltage toler 	s (RMS).
	alesa ji jari kepi ji ku ji ji ji
TEST DESCRIPTION EQUIPMENT STATUS CONFIGURATION	
THIS TEST DOES CONTAIN HAZARDOUS OPERATIONS.	ere i de la companya
The RF Signal Generator is adjusted to the FM/ and fed to the RCVR input. The RCVR video out discriminators. The five-point calibrator is the RF Signal Generator at each IRIG frequency thru 18. Each channel is deviated at emphasis level and at ± 15% of standard pre-em	put is fed to the used to deviate for Channels 5 the standard pre-
The FM channel pre-emphasis meter readings, BP (RMS) readings, and pre-emphasis DC voltage re channel at each deviation level are recorded f The TMI pre-emphasis curve is established or v	ading for each or future reference. erified to be correct.
This test will be performed as required prior troubleshooting the S-II A/B FM/FM telemeter	to checking or system.
FM/FM TCE in System Configuration.	
FM/FM TCE in System Configuration.	
FM/FM TCE in System Configuration.	
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Test Requi MSFC: Not Ap REV. DATE CONTRACTOR APPROVAL A.M. C. C. C. MORANIA MORANI	rements plicable Contractor Approval KSC Approval Contractor Approval CSC Approval CS

. APOLLO/SATU	RN TEST AND OPERATIONS	CATALOG (SHEET 2)		PAGE _		<u>.</u>
PRE-1	METRY CHECKOUT EQUENTIES TOLERANCE	TEST			τ 6 & Subs	
CE, LCC, 2P10A	I, COMPUTER PROC. INDENTIFIC	ATION		1.5 H	OUTS	
S. SUPPORT REQUIREMENTS	B			L		
		•				
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	0.00					
LCC TM Sta.	(Monitor)	•				
		1				1 :
7. OTHER APPLICABLE REF	FERENCE DOCUMENTATION			uniterior de la constitución de la		
B. ITEM CONTINUATION					· · · · · · · · · · · · · · · · · · ·	
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APOLLO/SATURN	KSC OPERATIONS TEST AND OPERATIONS CATALOG SHEET	PAGE
. TEST TITLE		V-28184
Telemetry Checkout Eq	uipment Data Reduction Procedure	SE
To verify that the Te for data reduction fr	lemetry Checkout Equipment is in the commagnetic tapes.	correct configuration
TEST CESCHIPTION EQUIPMENT	IT STATUS CONFIGURATION TO DOES NOT CONTAIN HAZARDOUS OPERATION	ıs.
Prime test organizati	on is Ground Instrumentation.	
will be conducted prito be used will deper procedure will descr 1. Equipment so 2. Equipment so 3. PCM-CIF Tape 4. PCM-Digital 5. Equipment so 6. Equipment so 7. PCM patching 8. Tape Dubbing 9. Timing 8 Vo 10. Lata annota 11. DLAS serial 12. Calibration 13. TCE Data co	etup for FN data reduction tup for PCM data reduction e Playback Bit Stripout etup for SSB data reduction. tup for SSB data reduction. configurations ce verification tion and disposition. train recording. s; Pen Recorder and Oscillograph ordination sheets	portions of this procedure ing performed. This
	Patching IES	0.48
3 9/6/74 Can	cal	Steven Dodge Piblich
& DEV. DATE	PFASON	Contractor Approval KSC Approval
7 CONTHACTOR APPROVAL	B. ORGANIZATION	9. DATE
	7 2532 15 2512	
s/A. Smith/L. Gantt	5-8511/5-8542	LA LOGICIAL DATE
s/A. Smith/L. Gantt	5-8511/5-8542 11. OHGANIZATION LV-INS-12	12. APPHOVAL DATE 7-3-69

APOLLO/SATURN TEST AND OPERATIONS CATALOG (SHEET 2)	PAGE _2CF _2
	12. KSC TEST NUMBER
TELEMETRY CHECKOUT EQUIPMENT DATA REDUCTION PROCEDURE	V-28184
3. LOCATION 14. COMPUTER PROC. INDENTIFICATION	IS. EST. TEST TIME
LCC N/A	
6. SUPPORT REQUIREMENTS	
LCC Telemetry Checkout Equipment (TCE) LCC TCE Magnetic Tape Recording.	
17. OTHER APPLICABLE REFERENCE DOCUMENTATION	
V-28009 Telemetry Checkout Equipment Daily Readiness Test	
18. ITEM CONTINUATION	
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ALE.	
St. Train Ast. 2	
KSC POHM 23-338C 1//87)	

SATURN IB ANTENNA SYSTEM AND
RF CABLE CHECKOUT

KSC OPERATIONS
CATALOG SHEET

V 28202
206 and Subs

MEASURE OPERATING PARAMETERS OF SIB ANTENNA SYSTEMS AND RF CABLES. THE OPERATING PARAMETERS MEASURED ARE:

ANTENNA VSWR
ANTENNA FEED SYSTEM ATTENUATION (POWER DIVIDER,
DIRECTIONAL COUPLER AND RF CABLES)
ANTENNA SYSTEM VISUAL CHECK

THIS TEST DOES X COEDING CONTAIN HAZARDOUS OPERATIONS.

S TEST TEST BUTT ON EL NEW VITS TELLS - GREICHER TION

- Antenna VSWR is measured by applying a signal at the operating frequency and modulated by 1 KHZ. A circular slotted line and VSWR indicator are used to obtain VSWR measurements. The operational frequency is verified with a Digital Frequency Counter.
- The attenuation of the RF cables, power divider and directional coupler is measured by applying a C.W. signal at the operating frequency. Calibrated power meters are used to measure power loss. The operating frequency is verified with a Digital Frequency
- The Antenna Subsystem (4 ea) are visually checked for physical damage.
 The vehicle shall be erected and the area around the antennas cleared of non-essential personnel.

TEST REQUIREMENTS MSFC. 1) 3.7.2.1.1 2) 3.7.2.1.2 3) 3.7.2.1.3 4) 3.7.2.1.4

4) 3.7.2.1.4 5) 3.7.2.2 6) 3.7.1.3

A 6-9-72 Visual Check of Antenna Subsystem	24842
CCSD (12517)	
LV-INS-11	

from the program of the companies of the experiment for the confidence of the confid	- Lambert Company
APOILS SATURN TEST AND OPERATIONS CATALOG (SHEET 2)	. 2 , 2
SATURN IB ANTENNA SYSTEM AND RF CABLE CHECKOUT	V 28202 206 and Subs
LC-39 N/A	16 Hours

- 1. RANGE FREQUENCY CLEARANCE IS REQUIRED FOR 450 MHZ.
- 2. CCSD QC
- 3. C3TC

1. "Test and Checkout Specifications and Criteria at KSC."

2. Saturn Antenna Manual

** .TEM CONTINUATION

SIB DIGITAL RANGE SAFETY COMMAND (DRSC)
DECODER BENCH TEST (SPARE)

TO VERIFY THE OPERATIONAL STATUS OF THE SPARE DRSC DECODER

X TOTANST CONTAIN HAPAPOOUS OPERATIONS

The decoder is connected to the DRSC GSE and power is applied to the decoder. The following parameters are checked: power consumption, functional performance and sensitivity. The decoder logic circuits are verified by sending the Safe Command from the DRSC GSE and observing the Safe indications on the GSE indicator panel. This is performed with three (3) test codes to verify operation of all twenty-one gates, audio input sensitivity, high voltage and low voltage tests. Negative spikes on the output pulse are verified to be not greater than 3.0 volts amplitude.

TEST REQUIREMENTS
MSFC: 3. 0. 0. 1. 2. 10. 1. 1
3. 0. 0. 1. 2. 10. 1. 2
3. 0. 0. 1. 2. 10. 2
3. 0. 0. 1. 2. 10. 3
3. 0. 0. 1. 2. 10. 4
3. 0. 0. 1. 2. 10. 5
3. 0. 0. 1. 2. 10. 5. 1
3. 0. 0. 1. 2. 10. 5. 2
3. 7. 2. 22

B 6-5-74 To reflect ET-66041 to 60C06050

| S-10-73 To Peffect FT-66009R2 to 60C06050 | W. Class of the following state | Season | Convector Approval | KSC Approval | CCSD | Majorial | CCSD | CATE | CCSD | CATE | CCSD | CATE | CCSD | CATE | CCSD |

	2 2
APOLLO SATURN TEST AND OPERATIONS CATALOG (SHEET 2)	PAJE 2 2 2
SIB DIGITAL RANGE SAFETY COMMAND (DRSC)	\$ 01
DECODER BENCH TEST (SPARE)	206 & Subs LC-39
TO COCATION 14 COMPUTER PROCUMDENTIFICATION	8 Hours
LC-39 N/A	8 Hours
200 200 (200 200)	
DRSC GSE (LCC ROOM 2P10) CCSD QC	
A CODE AC	보이 생각하는 않고 안 된다.
그는 없는데 사람들은 그 살아 보니 그 사람이 되었다.	重点 自分基因层块
17 OTHER APPLICABLE REFERENCE DOCUMENTATION	
1. Test Specifications & Criteria at KSC	
2. AVCO Instruction Manual - Decoder	
14 ITEM CONTINUATION	
[18] 그의 교회는 하는데 보이다 하고 있습니다. 이번 등 모	
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내 아마리 하는 사람들이 되었다. 그 사람들은 사람들은 사람들이 되었다.	
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KSC OPERATIONS APOLLO SATURN TEST AND OPERATIONS CATALOG SHI	EET	PECF 1 2
DIGITAL RANGE SAFETY COMMAND (DRSC)	•	V-28204 206 & Subs LC-39

10 VERIFY THE OPERATIONAL STATUS OF THE SPARE DRSC RECEIVER.

STOR ELJEPHENT STATUS CONFIGURATION

X DOES NOT CONTAIN HAZARDOUS OPERATIONS.

recreceiver is connected to the DRSC GSE and power is applied. The following presenters are checked: 3 DB bandwidth, 60 DB bandwidth, center frequency, limiter monitor voltage, quieting, audio frequency response, and image frequency petion, power input, audio ouput, audio bandwidth and deviation exitivity.

Whele Configuration - N/A

TEST REQUIREMENTS

KSC 3.0.0.1.2.9.1
3.0.0.1.2.9.2
3.0.0.1.2.9.3
3.0.0.1.2.9.4
3.0.0.1.2.9.5
3.0.0.1.2.9.6
3.0.0.1.2.9.7
3.0.0.1.2.9.8
3.0.0.1.2.9.9
3.0.0.1.2.9.9
3.0.0.1.2.9.9

A 5-10-73 TO Reflect ET-66009R2 to 60006050

PLY GATE

REASON

CONTROLL

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II ORGANIZATION

LV-INS-11

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LV-INS-11

IZ 3-77

APOLLO SATURN TEST AND OPERATIONS CATALOG (SHEET 2)	PAGE _2_ OF _ 2_	
1 151 THE COMMAND (DEC)	V-28204	
SIB DIGITAL RANGE SAFETY COMMAND (DRSC) ECEIVER BENCH TEST (SPARE)	206 & Subs LC-39	
LC-39 N/A	8 Hours	
S. SUPPLIEF FECALISEMENTS ;		

Range Clearance - 450 AHZ

DRSC GSE (LCC Room 2P10)

CCSD QC

JANER APPLICABLE REFERENCE COCUMENTATION

1. Test specifications & criteria at KSC

2. Motorola Instruction Manual - Receiver Mod MCR 503

THE TEM CONTINUATION

To insure Flight Readiness of the Digital Range Safety Command System. System parameters verified are:

Receiver Bandwidth
Image Rejection
Receiver Quicting
Decoder Logic Verification

System Command Verification System RF Threshold Level System Deviation Threshold Level Receiver Limiter Monitor Voltage

THIS TEST. DOES X DOES NOT CONTAIN HATARDOUS GERATIONS.

 $\widehat{A}_{ij}^{(k)}$ Vehicle command antennas and closed loop cables are connected to the receivers.

Calibrated closed loop cables are connected between the vehicle DRSC system and the DRSC GSE in the LCC, Room 2P10. An unmodulated RF signal is transmitted from the DRSC GSE to the Vehicle DRSC receivers to ascertain the following operating parameters:

Receiver 3 DB Bandwidth, 60 DB Bandwidth, corrected center frequency, quieting, limiter monitor voltage and image frequency rejection. An RF signal is then frequency modulated with various audio signals and the frequency response of the receiver is obtained. System dynamic bandwidth is checked.

The Vehicle DESC Systems are exercised by modulating the RF signal with various commands. Saturn IB VMGSE recordings of the DRSC measurements are analyzed to determine the functional performance of the systems.

Decoder logic circuits are verified by modulating the carrier with cutoff commands from the GSE encoder, and verifying output at TCE. This is performed with 3 test codes to verify all 21 gates. Negative spikes on the output pulse are verified to be not greater than 3.0 volts amplitude.

Vehicle Erected - Umbilicals Connected.

TEST REQUIREMENTS (See Item 18, Page 2)

ĺ	A 6-5-74 To reflect ET	-66041 to 60C06050	m. G. 6/1/2 1-27-70
_	Place CATE: spiece a servace est	PEASON	Contractor Approval KSC Approval
	m. Con - 7 22/	a SASANIZATION CCSD	S. DATE
_	MASA FEE APPROVAL	11 OPGANIZATION	12 APPROVAL SATE.
ĺ	Strately 1	LV-INS-11	12.3-7/

PASE 2 2 2 2 APOLLO SATURN TEST AND OPERATIONS CATALOG SHEET JE 2 452 7537 544914 V-28205 DIGITAL RANGE SAFETY COMMAND (DRSC) > 81+82".. " SYSTEMS TEST - CLOSED LOOP (VAB) 206 & Subs LC-39 4 TOME, TEMPAGE, INCENTED AT IN LC-39 N/A16 Hours SIB Stage Power DDAS SIB Vehicle Measuring GSE DRSC GSE (LCC, Room 2P10)
 Range Frequency Clearance for 450, 241, and 471 MHZ. 6. LCC TCE (LCC, Room 2P10) 7. CCSD QC 8. C3TC OTHER APPLICABLE SEEVES COCCUMENTATION 1. Test & Checkout Specifications & Criteria at KSC 2. AVCO Instruction Manual - Decoder 3. Motorola Instruction Manual - Rec. Model MCR 503 ITEM 5(Continued) TEST REQUIREMENTS - MSFC 1. 3.7.2.4 2. 3.7.2.5 3. 3.7.2.6 4. 3.7.2.8.1 3.7.2.8.2 3.7.2.9.1 7. 3.7.2.9.2 3.7.2.10 3, 7, 2, 11 10. 3.7.2.17.1 11. 3.7.2.17.2 12. 3.7.2.17.3 13. 3.7.2.17.4 14. 3.7.2.18 15. 3.7.2.19 16. 3.7.2.22

-

KSC OPERATIONS
APOLLO/SATURN TEST AND OPERATIONS CATALOG SHEET

15T TITLE
TELEMETRY, FM/FM SYSTEM FUNCTIONAL TEST
(SPARE)

RSC 10F 2

2. KSC 1EST NUMBER
V-28217

S. LEFECTIVITY
206 & Subs. LC-39

The objective of this test is to verify the performance of the spare FM/FM telemeter system. This is accomplished by measuring the SCO deviation of the RF carrier, SCO center frequencies and bandedge frequencies, confirming that preflight/inflight calibrations are received, and by measuring RF assembly power output and transmitter center frequency. Proper calibration sequence of the TM calibrator is verified.

IST DESCRIPTION EQUIPMENT STATUS CONFIGURATION

+ CHILL 24 3 4 17 67

HIS TEST DOES IX DOES NOT CONTAIN HAZARDOUS OPERATIONS.

The Telemeter System is connected to the TM checkout rack and the TCE stage module. The TCE RF signal generator is modulated at the SCO frequencies conforming to the FM/FM carrier deviation schedule and discriminator reference levels are recorded. Power is applied to the telemeter. Preflight calibration level of 50% is selected and the FM/FM carrier deviation schedule is compared to the recorded discriminator reference levels. Center frequencies of the SCO's are verified at the preflight calibration level of 50%. Preflight levels of 0% and 100° are selected, and the SCO's are checked for bandedge frequencies. The RF transmitter power output and center frequency are measured and verified to be within tolerable limits. The telemeter is checked for reception of preflight calibration and inflight calibration assignment.

FM/FM System (Spare) is verified in a Laboratory Test.

TEST REQUIREMENTS: MSFC - N/A KSC - N/A

		and the second second second second second second		selendo Le elementos
c 4E	V. DATE	REASON	Contractor Approval	KSC Approval
		CCSD	9. DATE 12 - 6 - 71	
1	ASA KEL APARO		12 APPROVAL DATE	

	<u>and the recording probability of each for the end of the contract of the cont</u>	(₂ , 6 ,
APOLLO S	ATURN TEST AND OPERATIONS CATALOG (SHEET 2)	PAGE _2 _ OF _2
TEST TITLE	Y. FM/FM SYSTEM FUNCTIONAL TEST	V-28217
(SPARE)		206 & Subs LC-39
13. LOCATION	14. COMPUTER PROC. INDENTIFICATION	15. EST. TEST TIME
LC-39	. N/A	4 Hours
	# # d	

SUPPOR: REQUIREMENTS

- 1. Range frequency clearance (240.2 MHZ), closed loop
- 2. LCC Telemetry Checkout Equipment (Stage and Common module)

17 OTHER APPLICABLE REFERENCE DOCUMENTATION

- 1. Instrumentation Program and Components List
- 2. Telemeter Checkout Rack Drawing, K-VE2-03037-1

18 ITEM CONTINUATION

-

TELEMETRY, PCM SYSTEM FUNCTIONAL TEST

V-28218

206 & Subs LC-39 · · · · · · · · · · · The objective of this test is to verify acceptable performance of the PCM

FM System. Parameters measured during this test are:

1. 600 KHZ VCO-Power Output and VCO Deviation

- Transmitter Center Frequency and Deviation
 Bit Rate and Encoding Accuracy of PCM/DDAS Assembly
- 4. Multiplexer Inflight Calibration Levels and Sequence
- 5. Frame and Master Frame Time Slot and Bit Pattern
- 6. Multiplexer Programming Verification

TEST SES, A PTION EQUIPMENT STATUS CONFIGURATION

X SOES NOT CONTAIN HAZARDOUS OPERATIONS.

The VCO Power Output is determined by observing the VCO line driver input measurement on ESE. The voltage read is compared to a calibration curve for the ESE channel and VCO power is then determined. At the CIF/TCE (2P12) the GP1 Transmitter and VCO 600 KHZ center frequency and frequency deviation are obtained by zero beating each signal with a test oscillator frequency. A circular Lissajous pattern is obtained and the corresponding test oscillator frequency is read from a frequency counter.

The PCM bit rate is determined by monitoring the clock output. The Model 270 multiplexers are checked for reception of inflight and single point calibrations. Frames 9 & 10, Channel 28, of both multiplexers are observed for encoding accuracy: of zero and five volts, respectively. Proper bit configuration and time slots for the frame and master frame sync words are verified by observing bit indications on the D/A Converter (Cal'-Up) Panel.

Multiplexer inflight levels and sequence are verified by observing calibration levels of each representative multiplexer channel as displayed on CIF/TCE (291) Chart Recorder,

The S-IB Stage shall be in a vertical, mated configuration.

TEST REQUIREMENTS

MSFC: 3, 2, 2, 1 thru 3, 2, 2, 8, 1; 3, 2, 3, 1 or

3.2.3.2

B 7-16-74 Equipments	Coopour	A Black
A 2-6-73 Revised Measuring method for VCO Frequency	J. R. Howard	L. C. Blanchard
E PEV. J. DATE	Contractor Appraval	KSC Approval
SCHTHACTOR ANDROSA KERA IS CHOANIZATION 19	CATE SON OF S	
J. R. Howard JDM CCSD	12-7-71	
15 WASA HSC APPROVAL 11. ORGANIZATION 12	APPROVAL DATE	Hilas
L. C. Blanchard LV-INS-12	12-15-71	
*9C FORM 21/118/17/67/ (1) 10 10 10 10 10 10 10 10 10 10 10 10 10	44.4	144 P. S. 1877

APOLLO SATURN TEST AND OPERATIONS CATALOG (SHEET 2)	Pan 2	0, 2
TELEMETRY, PCM SYSTEM FUNCTIONAL TEST	V-28218	
VAB N/A	6 Hours	£
1. Range Frequency Clearance is required (256.2 MHZ) 2. S-IB Stage Power 3. CIF/TCE (2P12 & 291) 4. N/A 5. RCA-110A Computer Complex 6. Access to Instrumentation Compartment #13		
1. Instrumentation Program and Components List 2. S-IB Stage Cable Interconnection Diagram 3. S-IB Stage Electrical Schematics		
B ITEM CONTINUATION		

TO THE RESIDENCE STATUS CONFIGURATION Y DOES NOT CONTAIN HAZARDOUS OPERATIONS. THIS TEST | DOES

THE DESCRIPE WILL BE TESTED IN AN ENVIRONMENTAL CHAMBER TO MEET THE REQUIRED OPERATIONAL THE TESTS WILL BE CONDUCTED UNDER THE EXTENSION OF SHELF-LIFE. THE TESTS WILL BE CONDUCTED UNDER 1991 THE TESTS TO BE PEPFORMED WILL INCLUDE THE FOLLOWING:

- COMMEND LOSIC TEST SENSIFICIATY TEST TWO STPUT TEST

- 2.2 VOLT BLOCKING TEST. OUTESCENT CURRENT TEST
- PARTIE SPERATING CURRENT CONSUMPTION TEST
- -ARTWARE SENSITIVITY TEST
- POWER SWITCH LEAKAGE TEST
- 10. FLEYPPINT TEST
- 11. Negative spikes on output pulse less than 3.0 volts amplitude.

1210 61718 - 57

MSFC REQUIREMENTS:

3.3.0.2.1 3.0.0.2.1.2.6 3.0.0.2.1.2.7 3.7.0.2.1.2.1. 3.7.0.2.1.2.2 3.0.0.2.1.2.8 3.3.0.2.1.2.3 3:8:8:2:1.2:18 3.0.0.2.1:2.4

X 3 74 F	To reflect ET-66041		3. <u>7.0.2.1</u>	2.5 m. al- 4/7/14	40761 1 4-74
	To reflect ET-660			M. GL = 5/1/73	ARRIUS ENTO
MARY DATE		ASON		Contractor Approval	KSC Approval
mad -	4 6	ER CORP., SPACE	DIVISION	12/16/71	
433	at Gray√an Chat V i arana	HZATION LV-INS-11	12	12-21-7	1

ستنسب عهراتها الهالانا APOLLO SATURN TEST AND OPERATIONS CATALOG (SHEET 2) SHELF LIFE EXTENSION TEST FOR COMMAND DECODER 50M10698 (STANCE AS RECUIFED 11. -11. 11 . OCATION 14 COUR TEM PHOS MOENT F CAT ON 12 47,25 N/A LC-39 SUPPORT HEQUIREMENTS CCSD 0.C. 2. DRSC GSE (LC-39 ROOM 2P10) 17 OTHER APPLICABLE REFERENCE COCUMENTATION 1. EXTENSION OF SHELF LIFE TESTING FOR SRS DECODER (50M16488) 2. AVCO INSTRUCTION MANUAL - DECODER AVCO MODEL 331800 IR ITEM CONTINUATION

KSC OPERATIONS APOLLO SATURN TEST AND OPERATIONS CATALOG SHEET	PAGE 1 0F 2
SHELF LIFE EXTENSION TEST FOR COMMAND RECEIVER MCR-503	V-28224
SOUTHOUSE (STANDBY)	AS REQUIRED
TEST COLLETIVES	AS KEGUIKED
THE OBJECTIVE OF THIS PROCEDURE IS TO VERIFY THAT THE COMMAND REQUIRED SPECIFICATIONS FOR THE EXTENSION OF SHELF LIFE.	RECEIVER MEETS THE
내가 그 그 말이 하루 이상 중인 말이 그리는 사람들은	
EST DESCRIPTION EQUIPMENT STATUS CONFIGURATION	
THIS TEST DOES X DOES NOT CONTAIN HAZARDOUS OPERATIONS.	
THE RECEIVER MILL BE TESTED IN AN ENVIRONMENTAL CHAMBER TO MEI CERATIONAL SPECIFICATIONS FOR THE EXTENSION OF SHELF LIFE. COMMISTED UNDER VARIOUS TEMPERATURE CONDITIONS AND AT THE RECOMMISTED UNDER VARIOUS TESTS TO BE PERFORMED WILL INCLUDE	THE TESTS WILL BE
1. AUDIO OUTPUT TEST 2. AUDIO DANDWIDTH TEST 3. INPUT FOMER TEST 4. RECEIVER QUIETING 5. LOV LEVEL TM TEST 6. OVERALL RF BANDWIDTH TEST 7. INPUT VOLTAGE TEST 8. IMAGE REJECTION TEST 9. ELECTRICAL RESISTANCE TESTS	
Loidle Configuration - N/A MSEC REG	MATERIAL PROPERTY OF THE PROPE
3.0.0.2.1 $3.0.0.2.1.1$ $3.0.0.2.1.1$ $3.0.0.2.1.1$	2 3.0.0.2.1.1.10
NA 3.0.0.2.1.1. 3.0.0.2.1.1. 3.0.0.2.1.1. 3.0.0.2.1.1. 3.0.0.2.1.1.	
\ 5 21 73 To reflect FT-66009R2 to 60006050 \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	
PEASON C	KSC Approval
Vi Judici (Chief CHRYSLER CORP, SPACE DIVISION	10/10/21
11 ORGANIZATION 12. AP	PROVAL DATE

APOLLO SATURN	TEST AND OPERATIO	ONS CATALOG (SHEET 2)		Profession
TART TITUE				
SHELF LIFE EXTENSION (STANDBY)	N TEST FOR COMMAN	D RECEIVER MOR-503	JAS TE DIP	
LC-39	N/A	FICATION	12 10 15	re Lagranda
SUPPORT REQUIREMENTS			The second secon	
1. ccsp o.c.				
2. RANGE FREGUE	NCY CLEARANCE FOR	450, 241, AND 471 MHE		
3. DRSC GSE (LC	C-39, Room 2P10)	7		
	•			
				· con
•				
1. EXTENSION OF	SHELF LIFE TESTI	NG FOR COMMAND RECEIVE	R MCR-503 (50%1648	93
	•	RECEIVER MODEL MCR 50		* 3
ITEM CONTINUATION				mineral communication of the School
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	al in Johnson Karaja			
		gripal i describitar processoria. St. 188		
		adding plagar allays as		
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KSC OPERATIONS APOLLO SATURN TEST AND OPERATIONS CATALOG SHEET	PAGEOF
	V-28231
IU COMMAND BENCH TEST (STANDBY)	AS REQUIRED

4 TEST DBJECTIVES

TO VERIFY THE OPERATING PARAMETERS OF THE IU COMMAND SYSTEM ARE WITHIN TOLERANCE.

TEST DESCRIPTION EQUIPMENT STATUS CONFIGURATION

THIS TEST DOES

X DOES NOT CONTAIN HAZARDOUS OPERATIONS.

DESCRIPTION

SIGNALS ARE FED FROM THE LABORATORY GSE TO THE IU COMMAND SYSTEM ON THE BENCH. THE RF SIGNAL GENERATOR IS USED AS A 450 MHZ SOURCE. ITS OUTPUT IS FM MODULATED BY THE COMMAND SIMULATOR AND FED TO THE COMMAND RECEIVER. RECEIVER DEVIATION SENSITIVITY IS DETERMINED BY INCREASING THE DEVIATION OF THE TEST SIGNAL UNTIL THE RECEIVER OUTPUT IS 1.27 VRMS AND MEASURING THE DEVIATION AT THIS POINT. FOR BANDWIDTH MEASUREMENT. THE UNMODULATED SIGNAL GENERATOR OUTPUT LEVEL IS INCREASED 3DB, AND ITS FREQUENCY VARIED ABOVE, THEN BELOW 450 MHZ UNTIL THE TM LO OUTPUT DECREASES TO 2.0V. THE FRE-QUENCIES AT THESE TWO POINTS DETERMINE THE 3DB BANDWIDTH. THE AVERAGE OF THE TWO IS FECEIVER CENTER FREQUENCY. THE 60DB BANDWIDTH IS DETERMINED IN THE SAME MANNER AS THE 3DB BANDWIDTH. RECEIVER QUIETING IS DETERMINED BY MEASURING THE DIFFERENCE IN CUTPUT FOR NO INPUT AND FOR 10UV INPUT. SYSTEM SENSITIVITY, BANDWIDTH, CENTER FRE-QUENCY, AND DEVIATION SENSITIVITY ARE DETERMINED IN A MANNER SIMILAR TO THE RECEIVER PARAMETERS EXCEPT 100% AVP THRESHOLD IS THE LIMIT INDICATION. DECODING ACCURACY IS TESTED BY SUCCESSIVELY COMPLEMENTING EACH BIT OF A CORRECT MESSAGE AND OBSERVING PRO-PER DECODER OPERATION. SYSTEM PHASE SHIFT IS MEASURED BY VARYING THE PHASE BETWEEN THE 1 AND 2 KHZ TO THE POINT WHERE 100% AVP'S CAN JUST BE MAINTAINED; AND THEN MEA-SURING THE PHASE DIFFERENCE ON AN OSCILLOSCOPE. DATA DECODING ACCURACY, ADDRESS VERI-FICATION AND COMPUTER RESET ARE DISPLAYED BY INDICATOR LIGHTS ON DECODER DISPLAY AND ARE INTERPRETED FOR PROPER OPERATION.

CONFIGURATION: N/A

PHASE: N/A

TEST REQUIREMENTS MSFC: 7921601

0.3.2.4.4.1.1

THRU

0.3.2.4.4.1.10

6 REV. DATE	REASON	Contractor Approval	KSC Approval
the Estiliar	8 ORGANIZATION IBM - 967	9 DATE 6-5-73	-
Allandel	L 6-5 W/s.//	6-19-72-	

APOLLO/S	ATURN TEST AND OPERATIONS CATALOG (SHEET 2)	PAGE _ 2 _ OF _ 2
1. TEST TITLE	V-28231	
IU COMMAND BENG	CH TEST (STANDBY)	AS REQUIRED
VAB 26E7	14. COMPUTER PROC. INDENTIFICATION N/A	18. EST. TEST TIME 1 MAN - 4 HOURS

16 SUPPORT REQUIREMENTS

INTERSTAGE:

OFF-COMPLEX:

FREQUENCY CLEARANCE FOR 450 MHZ, CLOSED LOOP

ON-COMPLEX:

THE PARTY OF THE PARTY.

FACILITY COMMUNICATIONS (OIS)

OUALITY INSPECTOR

17. OTHER APPLICABLE REFERENCE DOCUMENTATION

MSFC #111-5-509-8; III-5-510-17; III-5-510-26

IS ITEM CONTINUATION

KSC OPERATIONS APOLLO'SATURN TEST AND OPERATIONS CATALOG SHEET	PAGE OF
TEST TITLE	2. KSC TEST NUMBER V-28232
IU RF SYSTEMS SUPPORT - YAB	AS-206 & SUBS

A TEST GBIECTIVES

TO VERIFY THAT THE RF SYSTEMS FUNCTION PROPERLY; AND TO SUPPORT OTHER LAUNCH VEHICLE TESTING.

S TEST DESCRIPTION EQUIPMENT STATUS CONFIGURATION

THIS TEST __ DOES ___ DOES NOT CONTAIN HAZARDOUS OPERATIONS.

DESCRIPTION:

- A. COMMAND SIGNALS ARE TRANSMITTED BY HARDLINE FROM THE RF GSE TO THE IU COMMAND SYSTEM ABCARD THE VEHICLE. THE RF SIGNAL GENERATOR IS THE 450 MHZ SIGNAL SOURCE. ITS OUTPUT, MODULATED BY THE ACS, IS FED TO THE COMMAND ROVE INPUT. USING DECODER AVP AS THE CRITERION SYSTEM BANDWIDTH, CENTER FREQUENCY, SENSITIVITY, DEVIATION SENSITIVITY AND MESSAGE DECODING ARE CHECKED TO ENSURE THE ONBOARD SYSTEM FUNCTIONS PROPERLY. THE GSE IS CONFIGURED TO SUPPORT THE INTEGRATED TEST IN PROGRESS.
- B. RADAR THE GSE IS PREPARED TO CHECKOUT THE ON BOARD SYSTEMS. SIGNALS WILL BE SENT BETWEEN THE GSE AND THE TRANSPONDER IN THE IU. POWER OUTPUT IS MEASURED A VIA A RE PUMER METER. RECEIVER SENSITIVITY IS MEASURED BY DECREASING THE SIGNAL LEVEL INTO THE TRANSPONDER UNTIL COUNTDOWN OCCURS. RECEIVER AND TRANSMITTER CENTER FREQUENCIES ARE MEASURED VIA A FREQUENCY COUNTER. PULSE SHAPES, DELAY. TIME, AND PULSE CODE SPACING ARE MEASURED BY OBSERVING THE DETECTED PULSE OUTPUTS ON AN OSCILLOSCOPE. TELEMETRY OUTPUTS ARE MEASURED. THE INHIBIT CIRCUITS ARE TESTED BY ATTEMPTING TO INTERROGATE THE TRANSPONDERS AND MONITORING FOR REPLYS WITH THE INHIBIT APPLIED. THE INHIBIT IS REMOVED AND THE GSE CONTINUES TO INTERROGATE THE TRANSPONDER IN SUPPORT OF OTHER VEHICLE TESTING AS REDUIRED.

CONFIGURATION: IU LOCATED IN THE VAB IN ERECTED POSITION; IU COOLING AND POWER ON; ANTENNA COUPLERS AND TRANSMISSION SYSTEM CONNECTED TO IU RADAR

ATITETE A.

PHASE: 111, IV, VA

TEST REQUIREMENTS MSFC: 7921601 0.3.2.4.2.5 0.3.2.4.4.1

A	8/27/74	REVISED MSFC REC	PUIREMENTS	fullitation-	9-11-74
G. PEV.	DATE		REASON	Contractor Approve	KSC Approvo
el	D. COL	Jack hura	ILM - 967	5-4-7	2
7-	Ven	26	LV-INS-11	12 APPHOVAL DATE	

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KSC OPERATIONS
APOLLO/SATURN TEST AND OPERATIONS CATALOG SHEET PAGE 1 OF 2 V-28233 IU RF SYSTEMS SUPPORT - PAD REFECTIVITY A5-206 & SUBS TEST OBJECTIVES TO VERIFY THAT THE RF SYSTEMS FUNCTION PROPERLY; AND TO SUPPORT OTHER LAUNCH VEHICLE TESTING. S TEST DESCRIPTION/EQUIPMENT STATUS CONFIGURATION DOES NOT CONTAIN HAZARDOUS OPERATIONS. THIS TEST __ DOES DESCRIPTION: INSTRUCTIONS FOR GSE SET-UP AND QUICK LOOK EVALUATION OF THE OPERATION OF IU COMMAND AND RADAR AIRBORNE EQUIPMENT IS PROVIDED. RADAR IS TESTED BY EITHER THE GSE OR ETR, OR BOTH AS REQUIRED BY THE INTEGRATED TCP. IU COMMAND IS TESTED BY THE GSE OR GMIL AS REQUIRED BY THE INTEGRATED TCP. PROVISION IS MADE FOR THE GSE TO CAPTURE THE COMMAND RECEIVER AND SEND UPDATA COMMANDS CLOSED LOOP, AS WELL AS OPEN LOOP. CONFIGURATION: VEHICLE ON PAD B; BOTH GSE AND AIRBORNE SYSTEMS CONNECTED AS REQUIRED TO SUPPORTED INTEGRATED TEST. PHASE: VB, VI TEST REQUIREMENTS MSFC: 7921601 0.3.2.4.2.4.1 0.3.2.4.2.5 0.3.2.4.4.1 8/27/74 REVISED ASFC REQUIREMENTS B ORGANIZATION IBM-967 ORGANIZATION

LV-INS-11

APOLLO/SATURN TEST AND C	PERATIONS CATALOG (SHEET 2)	PAGE 2	of _2
TEST TITLE		V-28233	
IU RF SYSTEMS SUPPORT - PAD		S. EFFECTIVITY	
26E7, LC 39B . FT45, FT47	. INDENTIFICATION	AS-206 & SUBS	
S. SUPPORT REQUIREMENTS			
RD 41460 }			
INTERSTAGE REQUIREMENTS:	NONE	•	
OFF-COMPLEX:	RF CLEARANCE FOR 450, 569 OF IU RADAR; GMIL R	0, 5765 MHZ; ETR R EADOUT OF IU COMM	EADOUT
•	RF CLEARANCE FOR 450, 569 OF IU RADAR; GMIL R IU POWER AND COOLING, IBM TELEMETRY, IU MEASURING,	EADOUT OF IU COMMA	ND.
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OFF-COMPLEX:	OF IU RADAR; GMIL R IU POWER AND COOLING, IBM	EADOUT OF IU COMMA	ND.
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OFF-COMPLEX: ON-COMPLEX:	OF IU RADAR; GMIL R IU POWER AND COOLING, IBM TELEMETRY, IU MEASURING,	EADOUT OF IU COMMA QA, OIS, DDAS, IU 23D111 BUS POWER I	ND.
OFF-COMPLEX: ON-COMPLEX: OTHER APPLICABLE REFERENCE DOCUMEN IBM TECHNICAL MANUALS 66-699-1	OF IU RADAR; GMIL R IU POWER AND COOLING, IBM TELEMETRY, IU MEASURING,	EADOUT OF IU COMMA QA, OIS, DDAS, IU 23D111 BUS POWER I	ND.
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	KSC OPERATIONS APOLLO/SATURN TEST AND OPERATIONS CATALOG SHEET	PAGE1OF2_
,	TEST TITLE	V-28234
	RF ANTENNA ORIENTATION AND MSS CABLE CHECKS	AS-206 & SUBS

4 TEST OBJECTIVES

PHYSICALLY ORIENT MSS REPEATER ANTENNAS FOR OPTIMUM OPERATION WITH ETR GROUND STATIONS, AND VAB ROOF ANTENNAS; ORIENT VAB ROOF ANTENNAS TO MSS; TO MEASURE DELAY AND ATTENUATION OF MSS REPEATER ANTENNA SYSTEM; TO MEASURE ATTENUATION FROM THE LUT GSE TO THE INPUT OF THE COMMAND RECEIVER.

S TEST DESCRIPTION EQUIPMENT STATUS CONFIGURATION

IX DOES NOT CONTAIN HAZARDOUS OPERATIONS. THIS TEST | DOES

DESCRIPTION:

- A. FOR ATTENUATION MEASUREMENTS, A SIGNAL OF KNOWN VALUE IS INJECTED INTO TRANSMISSION SYSTEM UNDER TEST AND SIGNAL LEVEL ARRIVING AT OPPOSITE END IS MEASURED. THE DIFFERENCE IS RECORDED AS SYSTEM LOSS.
- B. FOR RADAR DELAY, A RADAR TRANSPONDER IS OPERATED AT THE POINT WHERE DELAY MEASUREMENT IS REQUIRED AND RADAR GSE IS USED TO MEASURE THE DELAY.
- C. FOR ANTENNA ALIGNMENT THE GSE (VAB, USB OR ETR, AS APPLICABLE) GENERATES SIGNALS THAT ARE FED THROUGH MSS ANTENNAS TO A LAB RECEIVER " (IU COMMAND) OR A TRANSPONDER (RADAR). THE ANTENNAS ARE THEN ALIGNED FOR MAXIMUM RECEIVED SIGNAL.

REQUIREMENTS:

FLIGHT:

GSE:

MSS PARKED IN CHECKOUT POSITION AT PAD 39B

SAFETY:

THE BUDDY SYSTEM WILL BE USED FOR OPERATIONS ON VAB ROOF AND ON MSS

ANTENNAS.

SAFETY GLASSES MUST BE WORN ON VAB ROOF.

PHASE:

TEST REQUIREMENTS MSFC: N/A

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APOLLO/SATURN TEST AND OPERATIONS CATALOG (SHEET 2)	PAGE 2 OF 2		
1. TEST TITLE	2. KSC TEST NUMBER V-28234		
RF ANTENNA ORIENTATION AND MSS CABLE CHECKS	AS-206 & SUBS		
13 LOCATION VAB ROOF 14 COMPUTER PROC. INDENTIFICATION 26B7, MSS N/A	18. EST, TEST TIME 5 MEN - 16 HOURS		

16. SUPPORT REQUIREMENTS

RD 41460

INTERSTAGE:

OFF-COMPLEX: OPEN LOOP FREQUENCY CLEARANCE FOR 450 MHZ, 5690 MHZ, AND 5765 MHZ,

RADAR SUPPORT, GMIL SUPPORT. ETR

ON-COMPLEX: FACILITY OIS, QUALITY INSPECTOR.

17. OTHER APPLICABLE REFERENCE DOCUMENTATION

NONE

8. ITEM CONTINUATION

KSC OPERATIONS APOLLO/SATURN TEST AND OPERATIONS CATALOG SHEET	PAGEOF	86 APOLLO/SA	TURN TEST AND OPERATIONS CATALOG (SP	1EET 2)	PAGE 2 0F 2	
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	. GSE emperatura de	18. LOCATION	14. COMPUTER PROC. INDENTIFICATION	<u> </u>	GSE	
ST OBJECTIVES		VAB 1K	NA	•		
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REASSEMBLY						
FUNCTIONAL TEST PACKAGING		18. ITEM CONTINUATION				
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TEST REC	<u>UIREMENTS</u>					
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KSC OPERATIONS APOLLO/SATURN TEST AND OPERATIONS CATALOG SHEET	PAGE _1OF _2		URN TEST AND OPERATIONS CATALOG (SHEET 2)	PAGE 2 OF2
* TEST TITLE MAINTENANCE AND REPAIR OF NASA P/N 75M00799, VALVE, VENT CHECK	Z. KBC TEST NUMBER V-30055	MAINTENANCE AND MAROTTA VALVE CO	REPAIR OF NASA P/N 75M00799, VALVE, VENT CHECK ORPORATION P/N 232783, MODEL CV33	V-30055
MAROTTA VALVE CORPORATION P/N 232783, MODEL CV33	3. EFFECTIVITY			GSE
4. TEST OBJECTIVES	GSE .	VAB 1K11	14. COMPUTER PROC. INDENTIFICATION NA	18. EST, TEST TIME 24 HOURS
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		GHE SPARE PARTS SPECIAL TOOLS AS CLEANING EQUIPME		
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S. TEST DESCRIPTION/EQUIPMENT STATUS/CONFIGURATION		ENVIKUNMENTALLY	CONTROLLED AREA	
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CLEANING LUBRICATION		17. OTHER APPLICABLE RE 6-BLGSEV-3970	PENENCE DOCUMENTATION	
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FUNCTIONAL TEST		18. ITEM CONTINUATION		
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APOLLO/SATU	RM TEST AND OPERATIONS CATALOG SHEET	PAGE OF 2	1	URN TEST AND OPERATIONS CATALOG (SHEET 2)	
1. TEST TITLE		2. KSC TEST NUMBER	1. TEST TITLE		V-30066
. MAINTENANCE AND	REPAIR OF VALVE, SOLENOID, NASA P/N 75M11869,	V-30066		REPAIR OF VALVE, SOLENOID, NASA P/N 75M11869,	D. EFFECTIVITY
MAROTTA VALVE CO	RPORATION, MODEL 100AS	S. EFFECTIVITY	. MINUTIA VALVE CO	ORPORATION, MODEL 100AS	GSE
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4. TEST OBJECTIVES	•	•	VAB 1K11	NA .	24 Hours
To describe the	maintenance, repair and functional testing of	the following valve:	16. SUPPORT REQUIREMENT		
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75H11869	Model 100AS	•	Spare Parts Special Tools an	e required	
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	Lubrication		6-BLGSEV-3981		
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KSC OPERATIONS APOLLO/SATURN TEST AND OPERATIONS CATALOG SHEET	PAGE 1 OF 2	1 1	ATURN TEST AND OPERATIONS CATALOG (SHEET 2)	PAGE OF
/75M14522 LBFV-1 MAINTENANCE AND REPAIR OF NASA P/N 75M05869 LBFV-1 VALVE,	2. KSC TEST NUMBER V=30079	MA INTENANCE A HANDLING, BU	75M14522 LBFV-1 ND REPAIR OF NASA P/N/75M05869 LBFV-1 VAL TTERFLY B. H. HADLEY, INC.	VE, CRYOGENIC T-30079
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8. REV. DATE REASON // CONTRICTOR APPROVAL 8. ORGANIZATION 9/DA	Contractor Approval KSC Approval	-		
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KSC OPERATIONS APOLLO/SATURN TEST AND OPERATIONS CATALOG SHEET	PAGE 1 OF 2	APOLLO/SATURN TEST AND OPERATIONS CATALOG (SHEET 2)	PAGE 2_OF 2
I. TEST TITLE		1. TEST TITLE	2. KSC TEST NUMBER
MAINTENANCE AND REPAIR OF REGULATOR 3/8" PNEUMATIC SYSTEM.	V-30088	MAINTENANCE AND REPAIR OF REGULATOR 3/8" PNEUMATIC SYSTEM.	V-30088
MAROTTA VALVE CORP., P/N 219004-B-155, J-151 AND B-111	J. EFFECTIVITY	MAROTTA VALVE CORP., P/N 219004-B155, J-151 AND B-111	GSE
MODEL RV-31, NASA P/N 75M08830-1, -2, -3	GSE	MODEL RV-31, NASA P/N 75M08830-1, -2 -3	18. EST. TEST TIME
4. TEST OBJECTIVES		VAB 1K 11 NA	24 hours
To maintain, repair and functionally test the following re	gulator:	16. SUPPORT REQUIREMENTS	
NASA P/N VEN	OOR P/N	GN2	
	004-B-111	GHe	
	004-B-155	Spare parts Special tools as required	
	004-J-151	Cleaning requirement	
Mod	el RV-31	Functional test equipment	
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Prime test organization is Mechanical Systems Laboratory.			
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KSC OPERATIONS APOLLO/SATURN TEST AND OPERATIONS CATALOG SHEET PAGE 1 OF 2	APOLLO/SATURN TEST AND OPERATIONS CATALOG (SHEET 2)	PAGE _2_0F _2_
T. TEST TITLE MAINTENANCE AND REPAIR OF NASA P/N 75M09286 V=30090	1. TEST TITLE	2. RSC TEST NUMBER
	MAINTENANCE AND REPAIR OF NASA P/N 75M09286	V-30090
VALVE, RELIEF, MAROTTA VALVE CORP. P/N 231074	VALVE, RELIEF, MAROTTA VALVE CORP. P/N 231074	GSE
I A. TEST OBJECTIVES	13. LOCATION 14. COMPUTER PROC. INDENTIFICATION	18. EST. TEST TIME
TO MAINTAIN, REPAIR AND FUNCTIONALLY TEST THE FOLLOWING VALVE:	VAB 1K11 NA	24 HOURS
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KSC OPERATIONS APOLLO/SATURN TEST AND OPERATIONS CATALOG SHEET	PAGE _1_OF2_	APOLLO/SATURN TEST AND OPERATIONS CATALOG (SHEET 2)	PAGE 2OF2_
MAINTENANCE AND REPAIR OF NASA P/N 75M09285, SOLENOID VALVE 3-WAY, 2-POSITION, MAROTTA VALVE CORP. P/N 806098	2. KSC TEST NUMBER V-30098 3. EFFECTIVITY	MAINTENANCE AND REPAIR OF NASA P/N 75M09285, SOLENOID VALVE, 3-WAY 2=POSITION, MAROTTA VALVE CORP. P/N 806098	V-30098 B. EFFECTIVITY GSE
A TEST OBJECTIVES TO MAINTAIN, REPAIR AND FUNCTIONALLY TEST THE FOLLOWING VALVE:	GSE	13. LOGATION 14. COMPUTER PROC. INDENTIFICATION VAB 1K11 NA 16. SUPPORT REQUIREMENTS	16. EST, TEST TIME 24 HOURS
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TEST REQUIREMENTS	<u>3_</u>		
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APOLLO/SATURN TEST AND OPERATIONS CATALOG SHEET	PAGE OF	APOLLO/SATURN TEST AND OPERATIONS CATALOG (SHEET 2)	PAGE 2_OF_
ST TITLE	Z. KSC TEST NUMBER	1. TEST TITLE	V-30103
	V-30103	MAINTENANCE AND REPAIR OF FILTER, HYDRAULIC SYSTEM,	3. EFFECTIVITY
MAINTENANCE AND REPAIR OF FILTER, HYDRAULIC SYSTEM, MARVEL ENGINEERING COMPANY P/N C-1-10	3. EFFECTIVITY GSE	MARVEL ENGINEERING CO., P/N C-1-10 NASA P/N 75M06607	GSE
MARVEL ENGINEERING COMPANY, P/N C-1-10 NASA P/N 75M06607 ST OBJECTIVES	002	13. LOCATION VAB 1K 11 NA NA	18. EST. TEST TIME 24 hours
To maintain, repair and functionally test the following	£11tore	16. SUPPORT REQUIREMENTS	24 110413
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Inspection Cleaning		6-BLGSEV-3608	
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APOLLO/SATURN TEST AND OPERATIONS CATALOG SHEET	PAGE 1	_or _2_
TEST TITLE	2. KSC TEST NUM	ER
MAINTENANCE AND REPAIR OF VALVE, LOX SYSTEM, PACIFI	v-30112	
VALVES, INC., P/N S8551EB(6)-12T	3. EFFECTIVITES	E
NASA P/N 75M05869 LGV-7		
To maintain, repair, and functionally test valve:		
NASA P/N	VENDOR P/N	1 7.50
75M05869 LGV-7	S8551EB(6)-12T	
TEST DESCRIPTION EQUIPMENT STATUS CONFIGURATION		
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CONTRACTOR APPROVAL 6. ORGANIZATION	9 DATE	KSC Approve

APOLLO/SATURN TEST AND OPERATIONS CATALOG (SHEET 2)	PAGE 2 OF 2
ST TITLE	2. KSC TEST NUMBER.
MAINTENANCE AND REPAIR OF VALVE, LOX SYSTEM, PACIFIC	V-30112
VALVE, INC., P/N S8551EB(6)-12T	a. EFFECTIĞĞE .
NASA P/N 75M05869 LCU 7	
VAB 1K11 NA	18. EST. TEST TIME 24 hours
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Functional test equipment	
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THER APPLICABLE REFERENCE DOCUMENTATION	
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APOLLO SATURN TEST AND OPERATIONS CATALOG SHEET	PAGEOF _2
TITLE MANUAL TO A MANUAL TO A MANUAL	2. KSC TEST NUMBER V-30115
NTELANCE AND REPAIR OF NASA P/N 54-K-F-364, VALVE, MANUAL	3 EFFECTIVITY
CO VALVE COMPANY P/N M-6P-X465-2G	GSE
CELECTIVES	
MAINTAIN, REPAIR AND FUNCTIONALLY TEST THE FOLLOWING VALVE:	
NASA P/N VENDOR P/N	
64-K-F-364 CODE 2-1-V-G M-6P-X465-2G	
ESCR FTION EQUIPMENT STATUS CONFIGURATION	
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APOLLO/SA	TURN TEST AND OPERATIONS CAT	ALOG (SHEET 2)	PAGE	2oF_2
1. TEST TITLE MAINTENANCE AND	REPAIR OF NASA P/N 64-K-F-3 PANY P/N M-6P-X465	**************************************	V-3011	T Y
19 LOCATION	14. COMPUTER PROC. INDENTIFICATION		ID EST. TEST	
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S. ITEM CONTINUATION				
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*** Test Parts are Disassembly Prime cest organization is Mechanical Systems Laboratory. **Test Requirements MA. **Test	W-2010W-2000W-0		PAGE 1 OF 2	APOLLO/SATURN TEST AND OPERATIONS CATALOG (SMEET 2)	PAGE 2 OF 2
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To maintain, repair and functionally test the following valve: To maintain, repair and functionally test the following valve: NASA 7/8 PRIOR 87/10 159-125527P NASA 7/8 PRIOR 87/8 PRIOR 97/8 P		PSI PANEL MOUNTING, NASA P/N 75M06582-12, REPUBLIC MANU-		PSI, PANEL MOUNTING, NASA P/N 75M06582-12, REPUBLIC MANU-	
To maintain, yepsir and functionally test the following valve: ### NAME OF PATHS 154-125527P		FACTURING COMPANY, P/N 154-12SS27P	AS REQUIRED	FACTURING COMPANY, PAN 154-12SS27P	
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KSC OPERATIONS APOLLO/SATURN TEST AND OPERATIONS CATALOG SHEET	PAGE 1 OF 2	APOLLO/SATURN TEST AND OPERATIONS CATALOG (SHEET 2)	PAGE 2 OF 2
MAINTENANCE AND REPAIR OF BACK PRESSURE VALVE, NASA P/N 75M08819, RIVETT, INC., P/N 2818-10 Z2764A	2. KBC TEST NUMBER V-30129 3. EFFECTIVITY GSE	MAINTENANCE AND REPAIR OF BACK PRESSURE VALVE, NASA P/N 75M08819, RIVETT, INC., P/N 2818-10 Z2764A	V-30129 S. EFFECTIVITY
4 TEST OBJECTIVES		18. LOCATION 14. COMPUTER PROC. INDENTIFICATION	10. EOT, YEST TIME
* TEST OBJECTIVES		VAB 1K11 NA	24 hours
To maintain, repair and functionally test the following	valve:	18. SUPPORT REQUIREMENTS	AND THE RESIDENCE OF THE PARTY
		GN2	
NASA P/N VENDOR P/N		GHe	
75M08819 2818-10		Spare Parts	
Z2764A		Special tools as required	
		Cleaning requirement	
S TEST DESCRIPTION/EQUIPMENT STATUS/CONFIGURATION		Functional test equipment	
The state of the s		Environmental controlled area	
THIS TEST TO DOES DOES NOT CONTAIN HAZARDOUS OPERATIONS.	It is classed a standby.		
Prime test organization is Mechanical Systems Laboratory.			
Test Parts are - Disassembly			
Inspection		17. OTHER APPLICABLE REFERENCE DOCUMENTATION	A CONTRACTOR OF THE PROPERTY O
Cleaning			
Lubrication		6-BLGSEV-3649-A	
Reassembly			
Functional Test	그리고 그는 건강을 받고 생각이	18. ITEM CONTINUATION	A THE RESIDENCE OF THE PARTY OF
Packaging			
	Test Requirements NA		was a second of the second
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[세계 : 사용 변화성 경기 및 사용자 : 1 전한 사람.			
그리는 문제 문을 당하는 결과 안 경상으로 하는 연안되다고 하는 것			
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APOLLO/SATURN TEST AND OPERATIONS CATALOG SHEET APOLLO/SATURN TEST AND OPERATIONS CATALOG SHEET 2)	PAGE 2 OF
J. TEST TITLE	2. KSC TEST NUMBER
I THAIRIDANG AND REFAIR OF TANEFOLD, COADING, SOLENDID OPERATED	; V-30147
MAINTENANCE AND REPAIR OF MANIFOLD, LOADING, SOLENOID OPERATED, V-30147 DELUGE WATER SYSTEM, NASA P/N 64-K-F-364, SHEETS 9, 15 AND 16, GROVE VALVE AND REGULATOR COMPANY, P/N M-14003-D	S. EFFECTIVITY GSE
GROVE VALVE AND REGULATOR COMPANY, P/N M-14003-D GSE 15. LOCATION 14. COMPUTES PROG. INDENTIFICATION	IB. EST. TEST TIME
LEST-CONFECTIVES NV	24 hours
TO DESCRIBE THE MAINTENANCE, REPAIR AND FUNCTIONAL TESTING OF THE WATER SYSTEM:	name benever a management of the Land of t
NASA P/N VENDOR P/N CHO	* *
GHe Spare parts	
64-K-F-364, SHEETS 9, 15 AND 16 M-14003-D Special tools as required	
Cleaning equipment 1997 Approximation 1997 Cleaning equipment 1997 Approximation 1997 App	
Functional test equipment	•
TEST DESCRIPTION/EQUIPMENT STATUS/CONFIGURATION	
THIS TEST XX DOES TOOKS NOT CONTAIN HAZARDOUS OPERATIONS. It is classed a standby.	
Prime test organization is Mechanical Systems Laboratory.	•
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Test parts are - Disassembly Inspection	<i>t</i>
Cleaning	HARROW, FORESTANDING CONTROL AND CONTROL OF
Lubrication	
Functional Test Packaging 6-BLGSEV-3689	
Packaging 6-BLGSEV-3689 18. ITEM CONTINUATION	The account of the second seco
Test Requirements NA	
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NASA-KSC APPHOVAL A II. ORGANIZATION 12. APPROVAL DATE	
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KSC OPERATIONS APOLLO SATURN TEST AND OPERATIONS CATALOG SHEET	PAGE 1 OF 2
MAINTENANCE AND REPAIR PRESSURE REDUCING, REGULATOR, NASA P/M.64-K-F-364, GROVE VALVE AND REGULATOR COMPANY, P/N	V-30148
M-13947-W MODEL 211P	GSE
TO DESCRIBE THE MAINTENANCE, REPAIR AND FUNCTIONAL TESTING OF	THE REGULATOR:
HASA P/N VENDOR P/N	

TEST DESCRIPTION EQUIPMENT STATUS CONFIGURATION

64-K-F-364

THIS TEST TO DOES NOT CONTAIN HAZARDOUS OPERATIONS. It is classed a standby.

Prime test organization is Mechanical Systems Laboratory.

Test parts are - Disassembly
Inspection
Cleaning
Lubrication
Reassembly
Functional test
Packaging

Phase NA

Test Requirements NA

M-13947-W, MODEL 211P

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	13/74
REASON CONTROL Approve	pproval
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APOLLO SAT	TURN TEST AND OF	PERATIONS CATAL	OG (SHEET 2)		PAGE	<u> </u>
MAINTENANCE AND	DUDATE OF BURGE	UDD DEDUCTVO	PECIT ATOP	NASA	V-JOLLS	BE8
P/N 64-K-F-364, MODEL 211P	GROVE VALVE AND	REGULATOR CO	MPANY, P/N	4-13947-W	S EFFECTIVITY	
3 JOSATION	14 COMPUTER PROC.	INDENTIFICATION			24 hours	ue:
VAB 1K 11 5 SUPPORT REQUIREMEN	NA NA					
GN2 GHe Spare parts Special tools as	• •	•				
Cleaning equipme Functional test	nt equ ipment	•	-			
Environmentally	controlled area	L Transfer	•			
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7. OTHER APPLICABLE R	EFERENCE DOCUMENT	ATION			**************************************	
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	KSC OPERA N TEST AND OPE	TIONS RATIONS CATALOG SHEET	PAGE 1 OF 2
MATATUE MATERIANCE AND MATER SYSTEM, NA PEGULATOR COMPAN	E V-30149 S. EFFECTIVITY GSE		
TO DESCRIBE THE		PAIR, AND FUNCTIONAL TESTING	G OF THE REGULATOR:
	-364 SHEET 4	M-13940-AJ	
ST SESSRIPTION EQUIPM	ENT STATUS CONFIGU	RATION	
HIS TEST T. COES	DOES NOT C	ONTAIN HAZARDOUS OPERATIONS. IT	T IS CLASSED A STANDBY
PRIME TEST ORGAN	IZATION IS MECH	ANICAL SYSTEMS LABORATORY.	
TEST PARTS ARE:	DISASSEMBLY INSPECTION CLEANING LUBRICATION REASSEMBLY FUNCTIONAL TES PACKAGING	π	
PHASE NA		TEST REQU	IREMENTS NA
NOTE: DUPLICAT	E - ORIGINAL MI	SPLACED COMPANY	
CON	CGL THIS CAT	SHEET. COMPINENT IS	ON PARTIE
A 5-23-74 NU	CEL THIS CAT	SINSET. COMPLINENT IS IN SYSTEM, NO MISS WORK PLAN	and W. Lundy State The Contractor Approval KSC Approval
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F 5-23-99 NU REV. DATE CONTENCTOR APPROVAL S/F. L. Kutch NASA WSC APPROVAL	LUNGER ACTIVE	REASON GANIZATION BATC 5-8534	CONTRACTOR Approvers

APOLLO/SATURN TEST AND OPERATIONS CATALOG (SHEET 2)	PAGE_2_0F_2_
MAINTENANCE AND REPAIR OF PRESSURE REDUCING REGULATOR DELUGE WATER SYSTEM, NASA P/N 64-K-F-364 SHEET 4, GROVE VALVE AND	2. ASC TEST NUMBER V=30]49 3. EPFECTIVITY SE 10. CET. TEST TIME
VAB 1K11 NA COMPUTER PROC. INDENTIFICATION	24 HOURS
GN2 GHe Spare Parts Special tools as required Cleaning equipment	
Functional test equipment Environmentally controlled area	
17. OTHER APPLICABLE REFERENCE OCCUMENTATION 6-BLGSEV-3693	

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KSC OPERATIONS		PAGE	APOLLO/SA	TURN TEST AND OPERATIONS	CATALOG (SHEET 2)	PAGE
APOLLO/SATURN TEST AND OPERATION		V-30150	MAINTENANCE AND	REPAIR OF VALVE, BALL,	MANUAL, 1" WATER METHANOL	z. ksc test number V=30150
MAINTENANCE AND REPAIR OF VALVE, BALL, M SYSTEM, (SERVICE ARMS), NASA P/N 75M0719	V-JOLJO GSE	SYSTEM, (SERVICE	E ARMS), NASA P/N 75M071 Y. P/N 3-116815-16	92-1, KOEHLER AIRCRAFT	S. EFFECTIVITY GSE :	
PRODUCTS COMPANY, P/N 3-116815-16		GSE	13, LOCATION	14. COMPUTER PROC. INDENTIFIC	ATJON	18. EST. TEST TIME
TEST OBJECTIVES	en de la companya de La companya de la co		VAB 1K 11	NA NA		24 10018
TO DESCRIBE THE MAINTENANCE, REPAIR AND	FUNCTIONAL TESTING OF TH	E VALVE:				
NASA P/N	VENDOR P/N		GN2 GHe			
75M07192-1	3-116815-1	6	Spare parts Special tools as			
	· · · · · · · · · · · · · · · · · · ·		Cleaning equipme Functional test			•
TEST DESCRIPTION/EQUIPMENT STATUS/CONFIGURATION			Environmentally			
THIS TEST XX DOES DOES NOT CONTAIN H	AZARDOUS OPERATIONS. It i	s classed a standby.		•		
	pAd G		1 ,		\mathcal{H}_{H} .	
Prime test organization is Mechanical Sy	stems Laboratory.					
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Test parts are - Disassembly Inspection	omericano de la compansión de la compan		17. OTHER APPLICABLE	REFERENCE DOCUMENTATION		
Cleaning					•	
Lubrication Functional test			6-BLGSEV-3694			
Packaging			18. ITEM CONTINUATION			
	Test Requ	irements NA			1.	
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REV. DATE REASON		tractor Approval KSC Approval				
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IP. NASA-KSC APPROVAL . OG 11. ORGANIZATIO	N 12. APPE	OVAL DATE				
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	FIST AND OPERATIONS CATA	LOG SHEET	PAGE . 1 OF . 2
MARINE AND TE AND THE	PEPAIR OF MASA P/N 75M058 1. E. DOHERGAN COMPANY, HO	59 LRY-7 : DDL 42W209M	V-30166 LEFFECTIVITY CSE
	epair, and functionally test	valve:	
	NASA P/N	VENI	OOR P/N
	75M05869 LRV-7	MODE	L 42W209M
Traffic Mention (Survey)	STATUS CONFIGURATION .		
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Pri test orga	anization is Mechanical Syst	ems Laboratory	
Test parts are		Laboratory.	
a salah Masalah sala	Inspection .		
	Cleaning		
	Lubrication		
	Reasceably Functional Test		
	Packaging		The state of the s
		NA	
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KSC OPERATIONS PAGE 1 OF 2		APOLLO'SA	PAGE _2_OF _2_	
APOLLO/SATURN TEST AND OPERATIONS CATALOG SHEET		. 1. TEST TITLE	2. KSC TEST NUMBER	
2. KSC TEST NUMBER V=30201		MAINTENANCE A	V-30201	
MAINTENANCE AND REPAIR OF SWITCH, PRESSURE, LIQUID		SYSTEM, CUSTO NASA P/N 75	AS REQUIRED	
HYDROGEN SYSTEM, CUSTOM COMPONENT COMPANY, P/N 603G1 AND	EM, CUSTOM COMPONENT COMPANY, P/N 603GI AND R/N 75N05752 HDS_123: 75M14524 HPS-123 AS REQUIRED			IS. EST. TEST TIME
4 TEST OBJECTIVES		VAB 1K11	NA .	24 hours
To maintain, repair, and functionally test the following sy NASA P/N 75M05752 HPS-1,-2,-3 75M14514 HPS-1,-2,-3 ** TEST DESCRIPTION EQUIPMENT STATUS CONFIGURATION THIS TEST TYPOSE DOES NOT CONTAIN HAZARDOUS OPERATIONS. Prime test organization is Mechanical Systems Laboratory. Test parts are — Disassembly Inspection Cleaning Lubrication Reassembly Functional Test Packaging Test ADD NASA P/N 75M14524 HPS-1,-2,-3; CHANGE EFFECTIVITY A 8-15-6% ADD SIMILAR PARTS -2,-3; CHANGE EFFECTIVITY A REV. DATE REASON S. ORGANIZATION BATC 5-8534	vitch: NDOR P/N 503G1 503G3	VAB 1K11 16 SUPPORT REQUIREME GN2 GHe Spare Parts Special tools Cleaning Requ Functional te Environmental	NA NA Ras required prement controlled area	

KSC OPERATIONS	PAGE 1 OF	- 2	APOLLO/S	ATURN TEST AND OPERATIONS CATALOG (SHEET 2)	PAGE 2 OF 2
APOLLO/SATURN TEST AND OPERATIONS CATALOG SHEET	PAGEO	F	1. TEST TITLE		Z. NSC TEST NUMBER
1. TEST TITLE	2. KSC TEST NUMBER		MAINTENANCE AND	REPAIR OF VALVE, PILOT CONTROLLED HYDRAULIC B	BALL, V-3,000
MAINTENANCE AND REPAIR OF VALVE, PILOT CONTROLLED HYDRAULIC	V-30220		NASA P/N 75M118	861, FLODYNE CONTROLS, INC., P/N 15C19	B. EFFECTIVITY
BALL, MASA P/M 75M11861, FLODYNE CONTROLS, INC.,	3. EFFECTIVITY				GSE
P/N 15C19	GSE		13. LOCATION	14. COMPUTER PROC. INDENTIFICATION	18. EST. TEST TIME &
4. TEST OBJECTIVES			VAB 1K11	NA NA	24 110015
	6.11	-1	16. SUPPORT REQUIREM	ENTS	
To describe the maintenance, repair and functional testing of	the following va	aive:			
NASA P/N VENDOR I	P/N		GN ₂		
INSK 171			GHe		
75M11861 15C19			Spare Parti	s ols as required	
			Cleaning re		
The state of the s			Functional	test equipment	
S. TEST DESCRIPTION/EQUIPMENT STATUS/CONFIGURATION			Environmen	tal controlled area	
THIS TEST X DOES DOES NOT CONTAIN HAZARDOUS OPERATIONS. LE	is classed a sta	andby.		•	
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		,			
Prime test organization is Mechanical Systems Laboratory.			1. 12		
Prime test organization is medical system.			17. OTHER APPLICABLE	E REFERENCE DOCUMENTATION	
Test Parts are - Disassembly		talia .	0		
Inspection			6-BLGSEV-3	943	
Cleaning					yanangan amangan kabupatan kabupatan
Lubrication Reassembly			16. ITEM CONTINUATION		
Functional Test					
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KSC OPERATIONS	PAGE 1° OF 2	APOLLO/SATURN TEST AND OPERATIONS CATALOG (SHEET 2)	
APOLLO/SATURN TEST AND OPERATIONS CATALOG SHEET		1. TEST TITLE	2. KSC TEST NUMBER
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	KSC OPERATIONS	PAGE 1 OF 2	APOLLO SATURN TEST AND OPERATIONS CATALOG (SHEET 2)	PAGE 2 _ OF _
	APOLLO SATURN TEST AND OPERATIONS CATALOG SHEET		I. TEST TITLE	I NOC TEST NUMBER
TEST	MAINTENANCE AND REPAIR OF PUMP, FIXED DISPLACEMENT,	V-30369	MAINTENANCE AND REPAIR OF PUMP, FIXED DISPLACEMENT,	V-30369
	COMMERICAL SHEARING & STAMPING CO., P/N P15H300BEYR10-16	S. EFFECTIVITY GSE	COMMERCIAL SHEARING & STAMPING CO., P/N P15H300BEYR10-16 NASA P/N 75M06350-1	GSE
	NASA P/N 75M06350-1	GSE	13. LOCATION 14. COMPUTER PROC. INDENTIFICATION	18. 6.81. TEST TIME
4 TEST C	BICCTIVES		VAB 1K 11 NA	24 hours
		mp: for P/N 1300BEYR10-16	GN2 Glie Spare parts Special tools as required	
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	Prime test organization is Mechanical Systems Laboratory			
	Test parts are - Disassembly Inspection Cleaning Lubrication		17 OTHER APPLICABLE REFERENCE DOCUMENTATION 6-BLGSEV-3529	
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KSC OPERATIONS	1 2	APOLLO/SATURN TEST AND OPERATIONS CATAL	LOG (SHEET 2)	PAGE _2OF2_
APOLLO/SATURN TEST AND OPERATIONS CATALOG SHEET	Z. KBC TEST NUMBER	I. TEST TITLE		2 40C TEST NUMBER
MAINTENANCE AND REPAIR OF LOX PNEUMATIC SYSTEM, REPUBLIC	V-30375	MAINTENANCE AND REPAIR OF LOX PNEUMATIC	SYSTEM, REPUBLIC	V-30375
MFG. CO., 81932 Series, P/N 52CL81938-6AS2 NASA P/N 75M05868	S. EFFECTIVITY GSE	MFG. CO., 6193B SERIES, P/N 52CL8193B- 6AS NASA P/N 75N05868		GSE
4 TEST OBJECT:VES	002	13. LOCATION IK 11 14. COMPUTER PROC. INDENTIFICATION NA	•	24 hours
To maintain, repair and functionally test the following pner	umatic system:	16. SUPPORT REQUIREMENTS		
	DR P/N B193B-6AS2	GN2 GHe Spare parts Special tools as required Gleaning requirement Functional test equipment		
THIS TEST XX DOES DOES NOT CONTAIN HAZARDOUS OPERATIONS. It is Prime test organization is Mechanical Systems Laboratory.	s classed a standby.	Environmentally controlled area		
Test parts are Disassembly Inspection Cleaning Lubrication Reassembly		17. OTHER APPLICABLE REPERENCE OCCUMENTATION 6-BLGSEV-3967 16. ITEM CONTINUATION		
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KSC OPERATIONS APOLLO/SATURM TEST AND OPERATIONS CATALOG SHEET	PAGE OF	APOLLO/	SATURN TEST AND OPERATION	S CATALOG (SHEET 2)	PAGE 2 OF 2	
MAINTENANCE AND REPAIR OF VALVE, CHECK, 4" AND 6" HORIZONTAL SWING, FUEL SYSTEM, POWELL ENGINEERING COMPANY, SERIES 2433	2. KBC TEST NUMBER L V-30383 SS 3. EFFECTIVITY	- SWING, FUEL SYS	O REPAIR OF VALVE, CHECK, STEM, POWELL ENGINEERING	COMPANY, SERIES 2433 SS	E RECTEST NUMBER V-30383 E REPRECTIVITY	
NASA P/N 75M05867 FCV-2, -3 : 75M14888 FCV-2, -3	AS REQUIRED	18 LOCATION	5867 FCV-2, -3; 75,14888	FCV-Z ₂ -3	AS REQUIRED	
4 TEST OBJECTIVES		VAB 1K 11	NA .		24 hours	
To maintain, repair and functionally test the following value	ve:	16. SUPPORT REQUIRES	1ENTS			
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Reassembly						
Functional Test		18. ITEM CONTINUATION	•	. \.		
Packaging			*			
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MAINTENANCE AND REPA HYDRAULIC SYSTEM, RE 458-3255, NASA P/N	AIR OF VALVE, CHECK, HYDRAULIC, 3000 PSI EPUBLIC MANUFACTURING COMPANY, MODEL NUMBER 75M09007	V-30387	458-32SS, NASA P		LIC, 3000 PSI NY, MODEL NUMBER	V-30387	
& TEST OBJECTIVES			VAB 1K 11	14 COMPUTER PROC. INDENTIFICATION		10 (27 1 6 2 1 7 416	
To maintain, repair	and functionally test the following valve:		16 SUPPORT REQUIREME	NA NTS		24 hours	
NASA P/	/N VENDOR P/I		GN2 GHe				
75M0900	07 458-32SS	v	Spare Parts	s as required			
			Cleaning req	uirement			
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	Cleaning Lubrication		TO THE APPLICABLE A	REFERENCE DOCUMENTATION			
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APOLLO SATURN TEST AND OPERATIONS CATALOG SHEET	PAGEOF	1. TEST TITLE			J REC TEST NUM	M & Pi
TEST TITUE	P HEC TEST NUMBER	MAINTENANCE	AND REPAIR OF VALV	e,1/2" MANUAL NEEDLE, RP-1	V-30393	
MAINTENANCE AND REPAIR OF VALVE, 1/2"MANUAL NEEDLE, RP-1	V-30393	SYSTEM DRAGON ENGINEERING CO., MODEL 816 NASA P/N 75M-5867 FNV-3, 75M14888 FNV-3		MODEL 816	AS REQUIT	
SYSTEM, DRAGON ENGINEERING CO, MODEL 816 NASA P/N 75M05867 FNV-3, 75M14888 FNV-3	AS REQUIRED	13 LOCATION	14 COMPUTER PROC. INDE		18 887 7887 71	
TEST OBJECTIVES		VAB 1K 11	NA NA		24	hours
		18 SUPPORT REQUIREME	HTS			
To maintain, repair and functionally test the following val-	ve:	CN2		•		
NASA P/N VEND	OR P/N	GHe		•		
		Spare parts Special too	ls as required			
75M05867 FNV-3 Mode 75M14888 FNV-3	1 816	Cleaning re	quirement			
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Inspection						
Cleaning Lubrication				•		
Reassembly		6-BLGSEV-35	39-A			
Functional Test						
Packaging	A 1987		i i			
Test.	Requirements	The same of the sa	and the street was			
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A 10-8-68 ADD PAD B COMPONENT 75M14888 FNV-3, CHANGE VENDOR P/N EFFECTIVITY AND VALVE SIZE	Py Theres					
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- - -	APOLLO/SAT		PERATIONS OPERATIONS	CATALOG SHEET		PAGE1_	_or2 ·
TEST		TO DEDATE OF	DIDED YOU LOO	A CDW T TOUTH	•	2. KSC TEST NUMB V-30404	ER
-		AND REPAIR OF 1, BYRON-JACKS				3. EFFECTIVITY	
	P/N 1E-2779 ,	NASA P/N 75M		-		GSE	
4 TEST	OBJECTIVES						
	To maintain,	repair, and fu	nctionally te	st the followin	g pump	:	
		NASA P/N			VENDO	R P/N	
		75M05869 LP	M-6		1E-27	79	
S TES	T DESCRIPTION EQU	IPMENT STATUS/CO	MEIGURATION		 		
ТНІ	Prime test of			ARDOUS OPERATION ystems Laborato		is classed	standby.
	Test Parts as	re - Disassemb	ly				
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APOLLO/SAT	URN TEST AND OPERA	ATIONS CATALOG	SHEET 2)	PAGE OF	
. TEST TITLE		70% 1000 CDW	TTOTITO	V-30404	
OXYGEN SYSTEM. NASA P/N 75M05	D REPAIR OF PUMP, BYRON-JACKSON PU 869 LPM-6	MPS, INC.	LIQUID .	SE CTIVITY	
13. LOCATION	14. COMPUTER PROC. IND	ENTIFICATION		IS. EST. TEST TIME	
VAB 1K11	· NA			24 hours	
16. SUPPORT REQUIREMEN	TS		-		
GN2 GHE					
Spare Parts Special Tools	ne required				
Cleaning requi	rement	98			
Functional Te Environmental	controlled area				
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17. OTHER APPLICABLE F	REFERENCE DOCUMENTAT	ION			
V-30478 V-30046	1				
18. ITEM CONTINUATION			1.2.		."

D.A. Scoville

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APOLLO SATURN TEST AND OPERATIONS CATALOG SHEET	PAGE . 1 . Or 2	I. TEST TITLE	a PSC 1131 H. conf H	
TEST TOTAL	2. KSC TEST NUMBER	MAINTENANCE AND REPAIR OF VALVE, CHECK, 1/2 INCH,	V-30412	
MAINTENANCE AND REPAIR OF VALVE, CHECK, 1/2 INCH,	V-30412	VACCO VALVE COMPANY, P/N CVT-3P-463P NASA P/N 75M05752 HCV-12	GSE .	
WASSO MARYO COMMANY, P/N CVT-3P-463P NAWA P/N 70X05752 HCV-12	GSE	18. LOCATION 14. COMPUTER PROC. INDENTIFICATION	IB. EST. TEST TIME	
4 TEST OBJECTIVES	-	VAB 1K11 NA	24 hours	
the following ch	eck valve:	16. SUPPORT REQUIREMENTS		
To maintain, repair and functionally test the following ch	eck valve.	GN2		
NASA P/N VEN	DOR P/N	Cile		
75M05752 HCV-12 CV	:-3P-463P	Spare Parts Special tools as required		
/3n03/32 RGV-12		Cleaning requirement		
		Functional test equipment Environmental controlled area		
S TEST CESCAIPTION EQUIPMENT STATUS/CONFIGURATION		Environmental controlled area		
THIS TEST XX DOES DOES NOT CONTAIN HAZARDOUS OPERATIONS.	It is classed a standby.			
Prime test organization is Mechanical Systems Laboratory.				
	· · · · · · · · · · · · · · · · · · ·	17. OTHER APPLICABLE REFERENCE DOCUMENTATION		
Test Parts are - Disassembly Inspection		6-BLGSEV-3855-A		
Cleaning				
Lubrication Reassembly		18. ITEM CONTINUATION		
Functional Test		18. ITEM CONTINUATION		
Packaging	The second of the second			
<u>Te</u>	st Requirements NA			
	<u> </u>			
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K ∼°OLLO∕SATURN TEST	SC OPERATIONS AND OPERATIONS	CATALOG SHEET	PAGE 1	_or2
PAINTENANCE AND REPAIR OF PAIR	POND, AND CLARK,	EUMATIC, HYDRO- INC.,	V-30416 3. EFFECTIVITY GSE)ER
To maintain, repair, and	functionally tes	t the following v	alve.	
NASA P/N		VENDOR P/N		
10430233		299T1-SERIES		
TEST CESCA PTION EQUIPMENT STAT	US/CONFIGURATION			
Test parts are - Disasse Inspect	ion	er Lucie de este	manus est	
Cleanin Lubrica	15;			
Reassem Functio	bly nal Test			
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APOLLO/SA	TURN TEST AND OPE	RATIONS CATA	LOG (SHEET 2)		PAG	E_2_or	_2_
MAINTENANCE AND REPAIR OF CHECK VALVE, PNEUMATIC, HYDRO-PNEUMATIC SYSTEM, JAMES, POND, AND CLARK, INC., P/N 299T1-SERIES, NASA P/N 10430233					V-30416 V-30416 CONTECTIVITY		
	14. COMPUTER PROC. IN	DENTIFICATION			16 LST. T	EST TIME	
VAB 1K11	NA NA				24 1	ours	
GN2 GHe Spare Parts Special tools Cleaning requ Functional to	irement						
7. OTHER APPLICABLE 6-BLGSEV-3794	REFERENCE DOCUMENTA	TION				a arron and a management of the second	Mention of the section of the access
B. ITEM CONTINUATION							
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	TURN TEST AND OPERA	NS TIONS CATALOG SHEET	PAGE 1 OF 2
MAINTENANCE AND	REPAIR OF VALVE, PNI	EUMATIC SYSTEM	2. KSC TEST NUMBER .
TWO WAY METERIN	G 6000 PSI MAROTTA	VALVE CORPORATION.	S. EFFECTIVITY
P/N 227934, MOI	DEL SPV29AA, NASA P/N	75M51272	GSEO
TEST OBJECTIVES			
To maintain, re	epair, and functional	ly test the following v	alve.
NASA P/N		VENDOR P/N	
75H51272		227934, MODEL	SPV29AA
TEST DESCRIPTION/FO	JIPMENT STATUS/CONFIGURATION	AL	
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THIS TEST IN DOES	DOES NOT CONTA	AIN HAZARDOUS OPERATIONS.	It is classed a standby.
Prime test ores	mization is Mechanics	al Systems Laboratory.	
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	Lubrication	100	
	Reassembly	Y Brand Brand Street Comment	the property of the second
	Functional Test		
	Packaging	2	
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		Test Requireme	nts
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Phase NA			
Phase NA		NA	
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	AN 1231 AND OFERATIONS CATALOG SHEET.	Z. KSC TEST NUMBER	1. TEST TITLE	A North Carlotter of the Carlotter of th	V-30438
VAINTENANCE AND	REPAIR OF REGULATOR, PRESSURE, NASA P/N	V-30438	MAINTENANCE AND F	REPAIR OF REGULATOR, PRESSURE, NASA P/N	3 EFFECTIVITY
	83, 75M05871-PPRV-5	S. EFFECTIVITY	75M51364, 75M5138	33, 75M05871-PPRV-5	GSE
TESCOM CORPORATI	ON, SERIES 26-1000	GSE	13. LOCATION 14	COMPUTER PROC. INDENTIFICATION	18. EST. TEST TIME
4. TEST OBJECTIVES			VAB 1K11	NA .	24 Hours
To describe the regulator:	maintenance, repair and functional testing o	f the following	GN2 GHe Spare Parts		
75M51383	SERIES 26-1000		Special Tools as Cleaning Equipmen Functional Test I	nt	
S. TEST DESCRIPTION EQUIP	MENT STATUS CONFIGURATION		Environmentally (
THIS TEST X DOES	DOES NOT CONTAIN HAZARDOUS OPERATIONS. I	t 1s classed a standby			
Test Parts are:	Disassembly	A CONTRACTOR OF THE CONTRACTOR	17. OTHER APPLICABLE REF	ERENCE DOCUMENTATION	
	Inspection				
	Cleaning Lubrication		6-BLGSEV-3990, 37	41, 3661	
	Reassembly		18. ITEM CONTINUATION		
	Functional Test				
	Packaging				
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	Test Requir	ements			
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	NED V-30136 AND V-30167 TO FORM A SERIES	+U. Clary			
6. REV. DATE		Contractor Approval KSC Approval			
F. L. Kutch	DATE E OF ST	11/15/69			
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D. A. Scoville		11/16/67			
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PAGE 2 OF2 V-30446 3. EFFECTIVITY

NCC OBEDITIONS	1 2	APOLL	O/SATURN TEST AND OPERATIONS CATALOG (SHEET 2)	PAGE _2_0
KSC OPERATIONS APOLLO/SATURN TEST AND OPERATIONS CATALOG SHEET	PAGE 1 OF 2	1. TEST TITLE		Z KSC TEST NUMBER
NATIVIENANCE AND REPAIR OF NASA P/N 75M12665-1	2. KSC TEST NUMBER	MAINTENANCE	AND REPAIR OF NASA P/N 75M126665-1	
ACCUMULATOR, SWING ARM SYSTEMS	V-30446		SWING ARM SYSTEMS	3. EFFECTIVITY
AMERICAN BOSCH ARMA CORPORATION, P/N EHS41-591			CH ARMA CORPORATION P/N EHS41-591	GSE IS EST. TEST TIME
A TONY ON ISCTINES	GSE	VAB 1K11	NA .	24 HOURS
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A SCOVILLE LV-MEC-1	11/16/6/			

KSC OPERATIONS
APOLLO SATURN TEST AND OPERATIONS CATALOG SHEET

MAINTENANCE AND REPAIR OF NASA P/N 75M13285-2, -4
SCLENGID VALVE, MAROTTA VALVE CORPORATION
P/N 220634-2, MODEL MV-130V

RSC OPERATIONS
PAGE 1 of 2

**SC TEST NUMBER V-30452

**SC TEST NUM

4 "EST DB.ECT VES

MAINTENANCE, REPAIR AND FUNCTIONAL TESTING OF THE VALVE.

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THIS TEST X DOES DOES NOT CONTAIN HAZARDOUS OPERATIONS. IT IS CLASSED A STANDBY.

PRIME TEST OF SAMIZATION IS MECHANICAL SYSTEMS LABORATORY.

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INSPECTION
CLEAVITY
LUBRICATION
REASSEMBLY
FUNCTIONAL TEST
PACKAGING

TEST REQUIREMENTS

Chilled

B 3/31/74 CANCEL	70 1202 1-30237 12 h	THOMAS HAMAN
F. C. KUTCH	REASON 8. ORGANIZATION BATC 5-8534	9. DATE NOVEMBER 15, 1967
Educated Scar	LV-MEC-1	12. APPROVAL GATE 11/16/67

PAGE 2 OF 2	
V-30452	
S EFFECTIVITY GSE	
10. EBY, TEST TIME 24 HOURS	

16 SUPPORT REQUIREMENTS

GN2
GHE
TEST PARTS
SPECIAL TOOLS AS REQUIRED
CLEANING EQUIPMENT
FUNCTIONAL TEST EQUIPMENT
ENVIRONMENTALLY CONTROLLED AREA

17. OTHER APPLICABLE REFERENCE DOCUMENTATION 6-BLGSEV-3916

18. ITEM CONTINUATION

CANCELLED

APOLLO SA	KSC OPERATIONS TURN TEST AND OPERATIONS CATALOG SHE	ET PAGE 1	or <u>2</u>
TEST T.T.E	REPAIR OF NASA P/: 75M08814-1, -2	V-3045	4
HYDRAIN IC ACCUMU	LATOR, SERVICE ARM SYSTEM	3. EFFECTIVITY	16
AMERICAN BOSC- A	RMA CORPORATION, P/N EHS41-414, -415	GSE	
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	REASSEMBLY		
	FUNCTIONAL TEST		
	PACKAGING		
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6. REV. DATE	REASON	Contractor Approval	KSC Approval
7. CONTRACTO - APPROV	B. ORGANIZATION	9. DATE	
F. L. KUTCH	BATC 5-8534	NOVEMBER 15, 196	7
TO NA A ZUG ANDIE ZAL		12. APPROVAL DATE	7 7
· down it	/ / / /	11/16/67	
S. A. S. VILLE	LV-MEC-1	11/10/01	4 .

APOLLO/SA	TURN TEST AND OPERATIONS CATALOG (SHEET 2)	PAGE _2_ OF 2
MAINTENANCE AND	REPAIR OF NASA P/N 75M08814-1, -2	V-30454
	ATOR, SERVICE ARM SYSTEM	S. EFFECTIVITY
	RMA CORPORATION P/N EHS41-414, -415	GSE
13. LOCATION	14. COMPUTER PROC. INDENTIFICATION	18. EST. TEST TIME
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16. SUPPORT REQUIREMEN	iTS .	

GN2 GHE SPARE PARTS SPECIAL TOOLS AS REQUIRED CLEANING EQUIPMENT FUNCTIONAL TEST EQUIPMENT ENVIRONMENTALLY CONTROLLED AREA

OTHER APPLICABLE REFERENCE DOCUMENTATION -BLGSEV-3919

ITEM CONTINUATION

NAC ODEDITIONS		APOLLO/SATURN TEST AND OPERATIONS CATALOG (SHEET 2)	PAGE _2_ OF 2
KSC OPERATIONS APOLLO/SATURN TEST AND OPERATIONS CATALOG SHEET	PAGE 1 OF 2	MATNTENANCE AND REPAIR OF NASA P/N 75M09046	V-30455
MAINTENANCE AND REPAIR OF NASA P/N 75M09046	V-30455	ACCUMULATOR ASSEMBLY, AMERICAN BOSH ARMA CORPORATION P/N EHS41-413	SE SE
ACCUMULATOR ASSEMBLY, AMERICAN BOSH ARMA CORPORATION P/1 EHS41-413	GSE	13. LOCATION 14. COMPUTER PROC. INDENTIFICATION	18. EST. TEST TIME
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FUNCTIONAL TEST PACKAGING TEST REQUIRE NA	MENTS	18. ITEM CONTINUATION	
F KUTCH BATC 5-8534	Contractor Approval DATE NOVEMBER 15, 1967 2. APPROVAL DATE 1//16/6/7		

APOLLO/SATURN TEST AND OPERATIONS CATALOG SHEET APOLLO/SATURN TEST AND OPERATIONS CATALOG SHEET PAGE 1 OF 2 1. TEST TITLE MAINTENANCE AND PEPAIR OF 75M11877, FILTER AIRCRAFT POROUS MEDIA, P/N ACM 3105-410AX2 3. EFFECTIVITY GSE TO MAINTAIN, REPAIR AND FUNCTIONALLY TEST THE FOLLOWING FILTER NASA P/N 75M11877 VENDOR P/N ACM3105-410AX2 ACM3105-410AX2 1. TEST TITLE MAINTENANCE AND REPAIR OF 75M11877, FILTER AIRCRAFT POROUS MEDIA, P/N ACM3105-410AXE S. EFFECTIVITY GSE 13. LOCATION VAB 1K11 NA 24 HOURS GN2 GHE GHE SPARE PARTS SPREIAL TOOLS AS REQUIRED CLEANING REQUIREMENT				
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F. L. KUTCH BATC 5-8534 NOVEMBER 7, 1967 11. ORGANIZATION 12. APPROVAL DATE 11/27/67 D. A. SCOVILLE LV-MEC-1	0. 427.			
11. ORGANIZATION 12. APPROVAL DATE 11. ORGANIZATION 11. ORGANIZATION 11/27/67 D. A. SCOVILLE LV-MEC-1	The Atheres	11/7/6; NOVEMBER 7 1967		
D. A. SCOVILLE LV-MEC-1	16 NASA ASC APPROVAL 1/1 III. ORGANIZATION	12. APPROVAL DATE		
D. A. SCOVILLE LV-MEC-1	Lecarette scoule	11/27/67		
	D. A. SCOVILLE LV-MEC-1	The state of the s		

APOLLO/SATU	RN TEST AND OPERATIONS CATALOG SHEET	PAGE 1 OF 2
EST TITLE	REPAIR OF MANIFOLD ASSEMBLY, ANDERSON P/N M6AVS-4, NASA P/N 75M04676 NMAB-1	V-30510 s. EFFECTIVITY As required
EST OBJECTIVES		
To maintain, rep	air and functionally test the following ma	anifold assembly:
	NASA P/N	Vendor P/N
	75M04676 NMAB-1	M6AVS-4
	PMENT STATUS/CONFIGURATION	
THIS TEST XX DOES		It is classed a standby.
Prime test organ	nization is Mechanical Systems Laboratory.	
Test parts are:	Disassembly Inspection	
	Cleaning	
	Lubrication	
	Reassembly	
	Functional Test	
	Packaging	
		Test Requirements NA
3 3		1 2 2
		A MAN AND THE SET OF COMME
REV. DATE	REASON	Contractor Approval KSC Appro
CONTRACTOR APPROVA	8. ORGANIZATION	9. DATE
	45	11/28/6)
The 17-14.		
F.L. Kutch	DATC 5-8534	12 ARRONAL DATE
The 17-14.	. III. ORGANIZATION	12. APPROVAL DATE

APOLLO/SA	TURN TEST AND OPERATIONS CATALOG (SHEET 2)	PAGE 2 OF 2
1. TEST TITLE MAINTENANCE AN	D REPAIR OF MANIFOLD ASSEMBLY, ANDERSON	2. KSC TEST NUMBER
GREENWOOD & CO	., P/N M6AVS-4, NASA P/N 75M04676 NMAB-1	As required
13. LOCATION	14. COMPUTER PROC. INDENTIFICATION	18. EST. TEST TIME
VAB 1K 11	NA NA	24 hours
16. SUPPORT REQUIREM		
GN2 GHe Spare parts	NTS	
GN2 GHe	as required	

17. OTHER APPLICABLE REFERENCE DOCUMENTATION

6-BLGSEV-3893

18. ITEM CONTINUATION

	KSC OPERATIONS APOLLO SATURN TEST AND OPERATIONS CATALOG SHEET	PAGE1OF2	
		. VSC TEST NUMBER	
٠:.	PARILICAL CARLE INCTALLATION	V-31011 AS-206 ε SUBS	5
		AS-512 & SUBS	

THE INTESTIGATION OF THE PROPERTY CONNECTING UMBILICAL CABLES TO THE INTESTIGATIONS.

THE TEST COES. X DOES NOT CONTAIN HATARDOUS OPERATIONS.

EDUCATE HEAD WILL BE MATED TO VEHICLE PRIOR TO CONNECTION OF MINISTRUM CABLES. TO GROUND POWER WILL BE OFF DURING UMBILICAL AND INVESTIGATION. UMBILICAL CABLES WILL BE UNCAPPED AND SCREWED TO TOTAL MILITARY HEAD! ASSEMBLY. ALSO CONNECT AND VERIFY GROUND START CONNECTIONS.

CHEISURATION: 10 MUST BE STACKED.

THE RESIDENCE OF STATES OF STATES

* 498: 11,111,1V

TEST REQUIREMENTS

MSFC: TM-011-001-2H 13.1a1.1.1

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1	12 1-	REVISE MSFC REQUIREMENTS	XE toror 104	W. f. Alors
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-	1	REVISE BLOCKS 3, 8, 13, 16 AML 17	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	A.K. Plean
		i enre uffertivity from Al-out & Subs	5-8-6	28 Dus
1:	1 1, 12	PRODUTED PHASE AND DELETED MSFC PROJERMENTS.	Let Line	L.R. Dais
; · = = .	2475	PEASON	Contractor Approval	KSC Approval
			22 SEPTEMBER	1967
1	LACES K	. DAVIDSON LV-GDC-25	17 OCTOBER 19	67

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	IORN TEST AND S TO GIVE		27 + 24 - 73 11 %	
TEST TITLE.			1015-3101	1
IU UMBILICAL	CABLE INSTALLATION		4S-512_8	
3 LOCATION	14 COMPUTER FROM	90-9-1 1 1 VIII 11-9-		7.5
/AB/LC-39A, B	N/A	and the company of the contract of the contrac	2005 3	5
e suppour REQUIREM!	NTS.			
INTERSTAGE:	NONE			
OFF-COMPLEX:	NONE .			
ON-COMPLEX:	IBM QUALITY IBM MECHANICAL			
	1BM VEHICLE NETWORKS			
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REFERENCE DOCUM	MENTATION	512 8 SUBS	206 & SUBS	
			40M67806	
CABLE INS	TALLATION DWG	40M12378 79091XX	79105XX	
	ERVICE ARM	75M08723	75M08723	
	SSEMBLY DWG INSTALLATION SPECS.	11200001-1 7907387	11200004-1 7907387	
IO CABLE	INSTALLATION SPECS.	7 307 307		
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				•

KSC OPERATIONS APOLLO SATURN TEST AND OPERATIONS CATALOG SHEET	PAGE OF
1257774	2. KSC TEST NUMBER V-31108
GSSU POWER UP/DOWN	AS-209 & SUBS

4 TEST DESCRIPTIONS

TO SPING THE GSCU & FOVE UP TO AN OPERATING CONDITION USING GROUND POWER OR POWER

TO POWER DOWN THE GSCU & FCVB USING GROUND POWER OR POWER SUPPLIES.

TEST DESCRIPTION EQUIPMENT STATUS CONFIGURATION

THIS TEST DOES X DOES NOT CONTAIN HAZARDOUS OPERATIONS.

THE GSCU(S) ARE LOCALLY OPERATED TO VERIFY PRESSURES, FLOWS AND TEMPERATURES ARE ...T-11 LIMITS. IF THE GSCU(S) ARE TO BE REMOTELY OPERATED, CONTROLS ARE POSITIONED FIR RENGTE OPERATION. ADDITIONAL OPERATIONS FOR SET-UP OF OTHER EQUIPMENT IS

SECURING STEPS POSITION CONTROLS SUCH THAT THE GSCU(S) ARE IN A STANDBY CONFIGURATION.

CONFIGURATION: INSTALLED ON LUT

PHASE: 11, 111, IV, V, VI

TEST REQUIREMENTS

0.3.5.2.3.2 0.3.5.2.3.4

				50 F.1 -1.	2/3/
7-12-7-	HEVISED BLOC	CVS 3, 4.5 17		5) X 1 X View 7/4//	1/1/1/2
	REVISED BLOC	CKS 3, 4, 400		Golich Hotra	A John
2.7 72	SHALSE BLOCKS	3, 5, 13, 16 & 17		Coly 19/2/71	& Behind
3.15 71	CHANGE PREFIX	FORM "IV" TO "V" AND BLOCK 1	.5	S/G.LECKIE	S/P.SCHMID
2.75		REASON		Contractor Approval	KSC Approval
	"OVAL	A GREANIZATION	9	DATE	
.s7.7		184 - K73		4 OCTOBER 196	57
ASB45		11. ORGANIZATION	12	APPROVAL DATE	1
L W. S	CHMID	JD-25		10-9-67	- 100 M
-	2/7 71 2/5 71 PAYE 	HATE TO ARTHURAL	SEVISED BLOCKS 3, 4, ACC 3 27 72 CHANGE BLOCKS 3, 5, 13, 16 & 17 275 71 CHANGE PREFIX FORM "IV" TO "W" AND BLOCK 1 PATE REASON A GREATURE A GREATURE BEASON A GREATURE A GREATURE 11. DREARIZATION	### REVISED BLOCKS 3, 4, A-D 3 #### CHANGE BLOCKS 3, 5, 13, 16 & 17 ###################################	### 15 71 CHRISE BLOCKS 3, 4, 400 3

APOLLO'S	ATURN TEST AND OPERATIONS CATALOG (SHEET 2)	PAGE 2 OF 2	
TEST TITLE		2. NEC TEST NUMBER	
		V-31108	
GSCU POWER UP/DOWN		AS-209 & SUBS	
LC 39	14. COMPUTER PROC. INDENTIFICATION N/A	1 MAN - 1.5 HRS. TOTAL	
6. SUPPORT REQUIREM	ENTS		
INTERSTAGE:	NONE .		
OFF-COMPLEX:	NONE .		
ON-COMPLEX:	IBM QUALITY ASSURANCE IBM MECHANICAL FACILITY 440 VAC		
7. OTHER APPLICABLE	REFERENCE DOCUMENTATION		
MSFC-MAN-008			
V-36038			
B. ITEM CONTINUATION			
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PAGE II 465 KSC OPERATIONS
APOLLO/SATURN TEST AND OPERATIONS CATALOG SHEET 1. TEST TITLE KSC TEST NUMBER LUT NETWORKS JUMPER/SIMULATOR INSTALLATION AND REMOVAL V-31109 . EFFECTIVITY GSE 4. TEST OBJECTIVES TO PROVIDE A UNIFORM METHOD TO IDENTIFY, INSTALL, CHECKOUT AND REMOVE FUSED TEST JUMPERS AND SIMULATORS FOR LUT ELECTRICAL NETWORKS SUPPORT OF LCC INTEGRATION TESTING. S. TEST DESCRIPTION/EQUIPMENT STATUS/CONFIGURATION THIS TEST DOES DOES NOT CONTAIN HAZARDOUS OPERATIONS. THIS PROCEDURE WILL: A. IDENTIFY FUSED TEST JUMPERS AS TO FUSE SIZE, PATCH RACKS AND JACK/PIN REQUIREMENTS. INSTALL AND CHECK FOR CONTINUITY AND INDICATE APPROPRIATE TIME FOR REMOVAL OF JUMPERS. B. IDENTIFY SPECIFIC REQUIREMENTS FOR INSTALLING SIMULATORS/ BREAKOUT BOXES AND THEIR REMOVAL. 6. REV. DATE REASON Contractor Approval KSC Approval 7. CO# PROVAL 8. ORGANIZATION 9. DATE BATC 5-8513 11. ORGANIZATION 12. APPROVAL DATE set LV-GDC-24

APOLLO/S	ATURN TEST AND	OPERATIONS CATALOG (S	HEET 2)		PAGE	OF _2_
LUT NETWORKS HIMPER STMIT ATOR INCTATION AND DESCRIPTION			3. EFF	2. KSC TEST NUMBER V-31109 3. EFFECTIVITY GSE		
LOCATION	14. COMPUTER PRO	NA .		18. ES1	T. TEST TIME	
SUPPORT REQUIREM	ENTS				E HOUR	11- 11
NA	į		į			
	e a					
OTHER APPLICABLE	REFERENCE DOCUME	MOITATION				
		NTATION				
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		NTATION				
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		NTATION				
TEM CONTINUATION		NTATION		+		

185

KSC OPERATIONS
APOLLO SATURN TEST AND OPERATIONS CATALOG SHEET PAGE _1_ OF _2_ . KSC TEST NUMBER SIB STAGE, ESE AND LSE ELECTRICAL PREPARATIONS AND PUST TEST OPERATIONS FOR BACKUP GUIDANCE SIMULATION FLIGHT TEST AND FRT V-31133 3. EFFECTIVITY 206 & Subs

4 TEST CB. ETT /65

TO COMFIGURE THE SIB STAGE, ESE, LSE ELECTRICAL AND PERFORM POST TEST OPERATIONS IN SUPPORT OF BACKUP GUIDANCE SIMULATION FLIGHT TEST AND FLIGHT READINESS TEST.

THET DEST! FTION EQUIPMENT STATUS CONFIGURATION

X DOES NOT CONTAIN HAZARDOUS OPERATIONS. THIS TEST DOES

Section A - Test Requirements

Section B - Preparations

Prepares the SIB Stage, ESE, and LSE Electrical for BUGS and FRT.

Section C - Securing

R.W. Richie for R.P. Clay

.F. Overstreet

Performs those steps necessary for securing the SIB Stage, ESE, and LSE Electrical from FRT.

APOLLO	SATURN TEST AND OPERATIONS CATALOG (SHEET 2)	PASE 2 OF 2
SIB STAGE.	V-31133	
	OPERATIONS FOR BACKUP GUIDANCE SIMULATION	206 & Subs
3 LOCATION	14. COMPUTER PROC. INDENTIFICATION	19. EST. TEST TIME
LC-39	N/A	1 4 Days

Skylab KPRD 20002 Skylab KPRD 21006

17 OTHER APPLICABLE REFERENCE DOCUMENTATION

V-20120 - SV Flight Readiness Test V-20119 - LV Backup Guidance Simulation Flight Test

18 ITEM CONTINUATION

A 2-5-73 Changes TCP Format & SEV. ! DATE REASON Contractor Approval CRGANIZATION 9 DATE 4. c. brown 9-22-72 CCSD 12. APPROVAL DATE 11. OHGANIZATION

LV-GDC-24 LV-GDC-22

9-22-72

PAGE 2 OF 2 ATTLLO SATURN TEST AND OPERATIONS CATALOG (SHEET 2) V-33037 -557 --- .1 206 & Sabs CERTIFICATION OF S-IB HYDRAULIC SERVICER M/A 3 1054-54 1.0 Hour F.C. Lab NOLE 17 OTAST ASE. SABLE PERERENCE DOCUMENTATION NONE 19 ITEM CONTINUATION

KSC OPERATIONS APOLLO/SATURN TEST AND OPERATIONS CATALOG SMEET	PAGE 1 OF 2
TEST TITLS	V-33037
CERTIFICATION OF S-IB HYDRAULIC SERVICER	206 & Subs
TEST OBJECTIVES .	
TO VERIFY THAT THE S-IB HYDRAULIC SERVICER IS OPERATIVE PRIOR TO ITS USE IN FLIGHT CONTROL CHECKOUT.	
TEST DESCRIPTION/EQUIPMENT STATUS/CONFIGURATION	
THIS TEST DOES DOES NOT CONTAIN HAZARDOUS OPERATION.	s.
 The unit is visually inspected for any physical dama leaks. 	ge or major hydraulic
O The with in actionted and the test actuations are also	lead 'uning the newtohle
The unit is activated and the test actuators are stro substitute computer, to verify proper system operati	on.
CONTRACT LETON. TAROPA HODEL HIDEM	
CONFIGURATION: LABORATORY TEST.	
TEST RI	EQUIREMENTS:
MSFC -	N/A
C 20 72 Effectivity Change and TI 2 17 Dec E	hiv i
A 6-28-72 Effectivity Change per TI-2-17, Rev. F	Contractor Approval KSC Appr
CONTINUE CAB 8. ORGANIZATION	9. DATE
D. Stewart/W. O. Brown CCSD	10-4-71
D. Stewart/W. O. Brown CCSD	12. APPROVAL DATE
	1- 1-
Herry W. Elm LV-CDC-33	10/20/71

S-IB FLIGHT CONTROL PRE-OPERATIONAL
AND SECURING PROCEDURE

ASSOCIATIONS CATALOG SHEET

PAGE 1 ..cf 2

V-33038

S-IB FLIGHT CONTROL PRE-OPERATIONAL
AND SECURING PROCEDURE

206 § SUBS

PREPARE S-IB FLIGHT CONTRO L HYDRAULIC & RECORDING SYSTEM (S) FOR OPERATION.

SECURE S-IB FLIGHT CONTROL HYDRAULIC AND RECORDER SYSTEM (S).

THE THE STATE STATES CONFIGURATION

TEST COES & DOES NOT CONTAIN HAZARDOUS OPERATIONS.

- 1. Visual inspection of hydraulic actuators and associated hardware.
- 2. Prepare hydraulic System(s) for operation.
- Stabilize the Flight Control recorders, calibrate, set sensitivity and speed.
- 4. Prepare display and control console for hydraulic system (s) control and monitoring.
- Secure hydraulic system (s) actuators, flight control recorders, and display and control console.

CONFIGURATION: Vehicle in vertical position.

TEST REQUIREMENTS: MSFC - N/A

A 2 2-5 PENIOR EFFECTIVE	TITY	Cottoner	H. W. Ely
A. Petro W.O. Brown	REASON B. ORGANIZATION CCSD	Contractor Approval 9 DATE	KSC Approv81
Hange W. Ey 11/20/2	11. ORGANIZATION LV- GDC-33	12. APPROVAL DATE /0/20/71	

	TEST AND OPERATIONS CATALOGISH	EET 2)	PAGE 2 05.	2
TEST TITLE			V-33038	
AND SECURING		D	2064 SUPS	gal i ari
FR#3, HB-1	OMPUTER PROC INDENTIFICATION		1.0 Hour	
SUPPORT REQUIREMENTS			210 11041	
 Ground power S-IB Stage I LCC Measur DDAS RCA-110A 	Power			
6. S-IB Vehicl	e Mechanical			
	. Vie			
7 OTHER APPLICABLE REFE	ENCE DOCUMENTATION			
NONE	•			

S-IB FLIGHT CONTROL SYSTEM PREPARATIONS AND SECURING OPERATIONS FOR OVERALL TESTS

***COPERATIONS CATALOG SHEET

***COPERATION OPERATIONS AND V-33039

***CONTROL SYSTEM PREPARATIONS AND V-33039

VERIFY PREPARATIONS AND SECURING OPTRATIONS FOR VEHICLE SYSTEMS OVERALL TESTS ARE COMPLETE.

THIS TEST 1081 X DOES NOT CONTAIN HAZARDOUS OPERATIONS.

CONTRACTOR SECTION SECTION

- Kad # Chu 251 4 T-4*/

- 1. VERIFY ALL CABLING AND CONNECTIONS TO HYDRAULIC ACTUATORS AND SUBASSEMBLIES.
- 2. PREPARE S-IB HYDRAULIC ACTUATOR SYSTEMS FOR OPERATION.
- CALIBRATE AND READY THE FLIGHT CONTROL RECORDERS FOR OPERATION.
- 4. PREPARE THE DISPLAY CONTROL CONSOLE FOR OPERATION.
- 5. SECURE HYDRAULIC SYSTEMS ACTUATORS, FLIGHT CONTROL RECORDERS AND THE DISPLAY CONTROL CONSOLE.

CONFIGURATION: VEHICLE IN VERTICAL POSITION.

TEST REQUIREMENTS: MSFC - N/A

A TY ZON PRINCE SEFECTIVITY	Hr. Ely
A DEV CATE REASON	Contractor Approval KSC Approval
TONTON DE APPEOUAL FAS E ORGANIZATION	9. DATE
La Contract of the Contract of	10-4-71
D. Stowert W. O. Brown CCSD	12 APPROVAL DATE
11 ASANCE ACCOUNTED TO 10 77 11 ORGANIZATION	10.10
12 200 7 2 10/20/20 LV- GDC-33	10/20/71

APOLLO SATURN TEST AND OPERATIONS CATALOG (SHEET 2)	PASE 2	
115T TITLE	2 MSC 7EST NO.	
S-IB FLIGHT CONTROL SYSTEM PREPARATIONS AND	. 7-33039	
SECURING OPERATIONS FOR OVERALL TESTS	206 8 505	
LACKATION (14 COMPUTER PROC. INDENTIFICATION	. EsC	
LC-39 N'A	1.0 Hour	·
SUPPORT REQUIREMENTS		
 Ground Power S-IB Stage Power 		
3. IU Power		
4. LCC Measuring		
5. DDAS		
6. S-IB Vehicle Mechanical		
STHEP APPLICABLE REFERENCE DOCUMENTATION		
STHEP APPLICABLE REPERENCE DOCUMENTATION		
NONE		
		<u></u>
ITEM CONTINUATION		
	- No 1	
		•
그 경우에 나타시작하게 됐다면 나타네. 나는 이 이 사람		

ALC:

APOLLO SATURN TEST AND OPERATIONS CATALOG SHEET	PAGE1_OF 2	APOLLO/SATURN TEST AND OPERATIONS CATALOG (SHEET 2)	PAGE CF
APOLLO SATURN TEST AND OF ERATIONS CATALOG SITES	2. KSC TEST NUMBER	1. TEST TITLE	V-33053
S-IC STAGE ACTUATOR LOCKS REMOVAL AND INSTALLATION	V-33053 3. EFFECTIVITY 503 and Subs	S-IC STAGE ACTUATOR LOCKS REMOVAL AND INSTALLATION	503 and Subs
A TEST OBJECTIVES	JOS and Subs	13. LOCATION 14. COMPUTER PROC. INDENTIFICATION NA NA	15 EST. TEST TIME 4 hours
To perform locks removal or installation of the S-IC Stage manual methods	Actuator Locks using	Engine servicing platform	
5 TEST DESCRIPTION EQUIPMENT STATUS CONFIGURATION THIS TEST DOES DOES NOT CONTAIN HAZARDOUS OPERATIONS. I Prime test organization is S-IC Stage.			
Instructions shall be provided for removal and installation servoactuator locks using manual engine actuators or manpor shall be made for performing locks installation or removal insulation boots and bellows installed or not installed.	wer. Provisions	17. OTHER APPLICABLE REFERENCE DOCUMENTATION	
		18. ITEM CONTINUATION	,
	est Requirements		
M	SFC: NA		
6. REV. DATE RFA.O.	Contractor Approval KSC Approval		
W.E. Estes/C.W. Tucker BATC 5-8521/5-8531	11/29/67		
R. Newall LV-MEC-23	APPROVAL DATE		

KSC OPERATIONS APOLLO/SATURN TEST AND OPERATIONS CATALOG SHEET	PAGE 1 OF 2
S. TEST TITLE	2. KSC TEST NUMBER V-34017
MECHANICAL SYSTEMS SUPPORT OF IU STAGE POWER	AS-206 & SUBS

& TEST DOJECTIVES

PPSYIDES SEQUENCED STEPS TO APPLY IU MECHANICAL SYSTEM POWER MANUALLY OR PER LOAI. SPESATES THE IU COOLING SYSTEM WITH MANUAL OR LAMI CONTROL. GAS BEARING SUPPLY SYSTEM MAY ALSO BE OPERATED MANUALLY OR UNDER CONTROL OF LAMI. FUNCTIONAL TESTING MAY BE PERFORMED UNDER CONTROL OF LAM2.

TEST CESCRIPTION EQUIPMENT STATUS CONFIGURATION

THIS TEST __ DOES | X DOES NOT CONTAIN HAZARDOUS OPERATIONS.

THIS TEST IS DIVIDED INTO FOUR PARTS:

PART 1: NORMAL SUPPORT (LAG1, LAM1, LAM2)

PART II: SYSTEMS MONITORING
PART III: MANUAL OPERATIONS
PART IV: EMERGENCY STEPS

CONFIGURATION: VEHICLE STACKED, UMBILICAL CONNECTED

PHASE: III, IV, V, VI

TEST REQUIREMENTS

MSFC: 7921601 0.3.5.2.4.3 0.3.5.2.4.4 0.3.5.2.0 0.3.5.2.7.1.1 0.3.5.2.2.1.1 0.3.5.2.2.1.1 0.3.5.2.3.1 TM-011-001-2H B.1.7.1.2 B.3.0.1.6 B.14.0.4.1.1 B.1.7.1.1

S/J.C. PEURRUNG THASA PSC APPROVAL S/P.W. 90HMID.		VAL .	18M - K73 AUGUST 28, 1989			
7 CONTRACTOR APPROVAL		POVAL	8 OPGANIZATION	v.	DATE	KSC Approval
A PEV.	1-8-70 DATE	REVISE MSFC			J.C. PEURRUNG	P. SCHMID
В	9-10-1	0-1 REVISE MSFC REQUIREMENTS, RETITLE PARTS I - IV		W.B. HUNT	P. SCHMID	
С	12-20-1	REVISE MSFC RE	EQUIREMENTS		G.E. LECKIE	P. SCHMID
D	4-19-2	PEVISED BLOCKS	5 3, 5, 16 & 17	4.4.6	G.E. LECKIE	P. SCHMID
Ε	8-6-4	REVISED BLOCKS 3, 4, 5, 14 AND 17			DX Caley	Poline

APOLLO'SATURN TEST AND OPERATIONS CATALOG	(SHEET 2)	PAGE _ 2 0+ 2 N
1. TEST TITLE	2. NSC TEST NUMBER V-34017	
MECHANICAL SYSTEMS SUPPORT OF IU STAGE POWER		AS-206 & SUBS
VAB, LC39A, B, C LAM1, LAM2, LA01		2 MEN - 8 HOURS
16. SUPPORT REQUIREMENTS TINTEDSTACE - NUME		

INTERSTAGE: N

OFF-COMPLEX: NO

ON-COMPLEX: OIS

HIGH PRESSURE GAS (6000 PSI)

750 PSI GN2

IU QUALITY ASSURANCE IBM MECHANICAL

17. OTHER APPLICABLE REFERENCE DOCUMENTATION
MSFC_MAN-014 20742212 V-51108
MSFC_MAN-008 V-21223 7921601
MSFC_MAN-036 V-36038 TM-011-001-2H

IS. ITEM CONTINUATION

	The second second	77-
APOLLO'SATURN TE	KSC OPERATIONS ST AND OPERATIONS CATALOG SHEET	PAGE 1 0F 2
ZST T.TLE		2. KSC TEST NUMBER V-34030
INSTALLATION AND REMOVA	L, LOX TANK SUMP, DSV-4B STAGE	1. EFFECTIVITY
		As Required
SCREEN ASSINGEM INSTALL AND UNDER SPECIFIED CLE TEST DESCRIPTION EQUIPMENT ST THIS TEST IN DOES SPECIFIES THE PROCEDURE TANK SIMP AND THE ANTI- ENSURES THAT SYSTEM CLE		TE THE LIQUID OXYGEN ASSEMBLY. PROCEDURE
THE LANCE PAO. THE STAGE MAY SE IN EINTERNAMENT SE VENTED TO IN VENTION AF	THER THE VERTICAL OR HORIZONTAL POSI-	REFORMED WITH SIAGE
THE STAGE MAY BE IN EIT TAXES MUST BE VENTED TO IN VERTICAL POSITION AF	THER THE VERTICAL OR HORIZONTAL POSI- D ANBIENT. X-RAY PORTION MUST BE PI FTER FINAL ERECTION. TEST REQUIRED MSFC TR N/A	REFORMED WITH SIAGE
THE STAGE MAY BE IN EIT TAXES MUST BE VENTED TO IN VERTICAL POSITION AF	THER THE VERTICAL OR HORIZONTAL POSI- D ANBIENT. X-RAY PORTION MUST BE PIFTER FINAL ERECTION. TEST REQUIREM MSFC TR N/A NUMBER	ENTS:
THE STAGE MAY BE IN EIT TAXES MUST BE VENTED TO IN VERTICAL POSITION AF	THER THE VERTICAL OR HORIZONTAL POSI- D ANBIENT. X-RAY PORTION MUST BE PIFTER FINAL ERECTION. TEST REQUIREM MSFC TR N/A NUMBER	ENTS:
C 20-20-71 CHARGE RD Line STAGE MAY BE IN EIT TAXES MUST BE VENTED TO IN VERTICAL POSITION AF C 20-20-71 CHARGE RD Line STAGE MAY BE IN EIT A 2-17-1 STAGE RD	THER THE VERTICAL OR HORIZONTAL POSI- D ANBIENT. X-RAY PORTION MUST BE PI FTER FINAL ERECTION. TEST REQUIRED MSFC TR N/A	ENTS:
C 10-20-71 CONCE RD B M-08-71 STATED TO A 0-17-1 NASSULL N	THER THE VERTICAL OR HORIZONTAL POSI- D ANBIENT. X-RAY PORTION MUST BE PI- FTER FINAL ERECTION. TEST REQUIREM MSFC TR N/A NAMBER LOCK 17 SC TEST NO. V-34030, WAS 0-TV-34030 D NOWSER AND DELETED PHASE CALLOUT EXCEPTED.	ENTS:
C 10-20-71 CINCE RD B NA-08-71 STUNGE RD C 20-20-71 CINCE RD C 20-20-71 CINCE RD C 20-20-71 CINCE RD C 20-20-71 CINCE RD	THER THE VERTICAL OR HORIZONTAL POSI- D ANDIENT. X-RAY PORTION MUST BE PRETER FINAL ERECTION. TEST REQUIREM MSFC TR N/A NUMBER LOCK 17 SC TEST NO. V-34030 WAS 0-TV-34030 D NUMBER AND DELETED PHASE CALLOUT LINEERS REASON	ENTS: ENTS: Entropolis Stands Entropolis Stands Entropolis Approve Eschapping Eschapping Eschapping Eschapping Eschapping Eschapping
C 10-20-71 CONCE RD B M-08-71 STATED TO A 0-17-1 NASSULL N	THER THE VERTICAL OR HORIZONTAL POSID ANDIENT. X-RAY PORTION MUST BE PROFITER FINAL ERECTION. TEST REQUIREM MSFC TR N/A NUMBER LCCK 17 SC TEST NO. V-34050 WAS 0-TV-34050 D NUMBER AND DELETED PHASE CALLOUT ENDERS REASON 8. ORGANIZATION	ENTS: B. Changlad Barrel W. A. Employed Barrel What Approx Asc Asc Approx Asc Asc Approx Asc Asc Approx Asc Asc Asc Approx Asc

APOLLO SATURN TEST AND OPERATIONS CATALOG (SHEET 2) PAGE CF - CF		TEST AND ORSEATIONS CATALOG (SHEET 2)	PAGE 2 OF 2
INSTALLATION AND REMOVAL, LOX TANK SIMP, DS7-43 STAGE V-34030 DEFECTIVITY AS REQUIRED		2. KSC TEST NUMBER	
COLER APPLICABLE REFERENCE DOCUMENTATION DAC DRAVING 1857687 DAC DRAVING 1862406		트 10일 및 10일 문화 보고 10일 보고 있습니다.	V-34030
SCOTION N/A 8 Hours SUD-54050-D 40090-2V COTIER APPLICABLE REFERENCE DOCUMENTATION DAC DRAWTING 1B57687 DAC DRAWTING 1B62406 TEM CONTINUATION	INSTALLATION AND RE	MOVAL, LOX TANK SUNF, DSV-43 STAGE	
S. LC 39 N/A 8 Hours SUP-34030-D 40090-2V OTHER APPLICABLE REFERENCE DOCUMENTATION DAC DRAWTING 1B57687 DAC DRAWTING 1B62406 ITEM CONTINUATION	OCATION 14. G	OMPUTER PROC. INDENTIFICATION	
SID-34030-D 40090-2V OTHER APPLICABLE REFERENCE DOCUMENTATION DAC DRAWING 1B57687 DAC DRAWING 1B52406 ITEM CONTINUATION	The state of the s		8 Hours
OTHER APPLICABLE REFERENCE DOCUMENTATION DAC DRAWING 1857687 DAC DRAWING 1862406 ITEM CONTINUATION	SUPPORT REQUIREMENTS		
TEM CONTINUATION			
TEM CONTINUATION			
ITEM CONTINUATION			
TEM CONTINUATION			
	DAC DRAWING 1B5768 DAC DRAWING 1B6240	RENCE DOGUMENTATION 17 16 .	
	ITEM CONTINUATION		
	ITEM CONTINUATION	The state of the s	
	ITEM CONTINUATION	19 / 19 - 19	
	ITEM CONTINUATION	10 A13-L	
	ITEM CONTINUATION		
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	ITEM CONTINUATION	The state of the s	
	ITEM CONTINUATION	Services (Services (Servic	
	ITEM CONTINUATION		

ASC FORM 22-334 7:67.

KSC OPERATIONS
APOLLO/SATURN TEST AND OPERATIONS CATALOG SHEET PAGE 1 OF 2 KSC TEST NUMBER V-34045 IU LIGHT COMPONENT INSTALLATION & REMOVAL EFFECTIVITYSL-206 & SUBS AS-512 & SUBS

4 TEST OBJECTIVES

TO INSTALL OR REMOVE COMPONENTS IN THE INSTRUMENT UNIT.

5 TEST DESCRIPTION EQUIPMENT STATUS CONFIGURATION

[X] DOES NOT CONTAIN HAZARDOUS OPERATIONS. THIS TEST | DOES

LIGHT COMPONENTS ARE HAND CARRIED INTO THE IU (USING HARNESS OR TRANSPORTER BAG) POSITIONED, AND MOUNTING HARDWARE IS INSTALLED AND TORQUED. REMOVAL IS ACCOMPLISHED BY REVERSING PROCEDURE FOR INSTALLING.

CONFIGURATION: VEHICLE EITHER STACKED OR IU DEMATED IN RECEIVING AREA.

PHASE: II, III, IV, V, VI

KSC F OHN 23-338 17 671

TEST REQUIREMENTS

512 AND SUBS 206 AND SUBS MSFC: 7921601 0.3.3.1.1

MSFC: 7916404 0.3.3.1.1

			the first of the second of the	٠.		
С	C 4/19/72 REVISED BLOCKS 3, 5, 16 & 17				Techie Wholm	Philad
В	B 6-4-71 CHANGED PREFIX		FROM "IV" TO "V"		YE Leckie Phol	
А	1/7/70 REVISED MSFC REQUIREMENTS - BLOCKS 5 & 17		17	Josemma 9	Philippind	
6 REV.	DATE		REASON		Contractor Approval	KSC Approval
7 CONT	RA TOR APP	ROVAL	8. ORGANIZATION	9.	DATE	
S/W	S/W. B. HUNT		IBM - 906		OCTOBER 2, 196	7
10 NASA	10 NASA SC APPROVAL		11. ORGANIZATION -	12	12. APPROVAL DATE	
S/ F	S/ P. W. SCHMID		JD-25		OCTOBER 6, 196	7
100						

PAGE _ 2 OF _ 2 APOLLO/SATURN TEST AND OPERATIONS CATALOG (SHEET 2) 2. KSC TEST NUMBER 1. TEST TITLE V-34045 IU LIGHT COMPONENT INSTALLATION & REMOVAL 18. EST. TEST TIME 14. COMPUTER PROC. INDENTIFICATION 13. LOCATION N/A LC 39A, B, C 16. SUPPORT REQUIREMENTS INTERSTAGE REQUIREMENTS: N/A

IBM QUALITY ASSURANCE ON-COMPLEX SUPPORT: IU VEHICLE ELECTRICAL NETWORKS

N/A

IBM MECHANICAL

17. OTHER APPLICABLE REFERENCE DOCUMENTATION 10Z22501 (SAT V) 7921601 7916404 10Z22204 (SAT IB)

18. ITEM CONTINUATION

OFF-COMPLEX SUPPORT:

APOLLO SATURN TEST AND OPERATIONS CATALOG SHEET	PAGE 1 OF 2
TO ACCEOS DOOP INSTACLATION & PEMOVAL	V-34046 SEFFECTIVITY AS-206 & SUBS

TO INSTALL OR PEMOVE THE INSTRUMENT UNIT ACCESS DOOR.

TO THE LEVEL AT CAREST PARTY STATUS LINE STATION

THE TEST & BOLES CONTAIN HAZARDOUS OPERATIONS.

THIS SUB TASK IS DIVIDED INTO TWO PARTS:

- A. THE ACCESS DOOR IS INSTALLED BY POSITIONING IT IN THE OPENING AND UPPER AND LOWER SPLINE PLATES ARE INSTALLED. THE DOOR HANDLES ARE REMOVED AND LEFT AND PISAT SIDE SPLICE PLATES ARE INSTALLED, THEN ATTACHING HARDWARE IN THE DOOR STRESS CORROSION PRICE TO AND FOLLOWING INSTALLATION.
- E. THE DOOR IS REMOVED BY REVERSING THE SEQUENCE FOR INSTALLATION.

CONFIGURATION: VEHICLE STACKED OR IU IN STORAGE AREA.

PHASE: II, V, VI

TEST PEQUIREMENTS

MSFC: 7921601 0.3.3.1.1 0.3.3.2.1.1

			and the second s	
=	8 6-4 120/15/5	31/X/C 3, 5 AID 17	. Dr. Riley	Push
€ .	3-23-4 PEVISE B	LOCK 5	D.K. RILEY	P. SCHMID
3	2-8-3 PLVISE -	AZARUNUS LEVEL	G.E. LECKIE	P. SCHMID
4.1		Widers 3, 5, 16 8 17	G.E. LECKIE	P. SCHMID
	The state of	CLEIZ IPON "LY" TO "Y"	G.E. LECKIE	P. SCHMID
1 2	1-7-75 SHALLEN	YSEC REQUIREMENTS	J.C. PEURRUNG	P. SCHMID
- I	* 1 * 5	PEASON	Control tor Approval	KSC Approval
3 4.8		PROTESTINAÇÃO II	29 SEPTEMBER 12 APPROVAL DATE 10 OCTOBER 19	
100 - 25 UD - 25			67	

APOLLOS	ATURN TEST AND OPERATIONS CATALOG (SHELL 2)	PAGE STATE	
1. TEST TITLE		2 -50 TEST N. WEER N=347-5	
IU ACCESS DOOR	INSTALLATION & REMOVAL	AS-205 & SUBS	
13 LOCATION	14. COMPUTER PROC. INSENTINGATION	12 4 4 1 14 57 5 VE	
♣C 39A, B, C	N/A	2 MEN - 1 HOUR	

INTERSTAGE REQUIREMENTS:

N/A

OFF-COMPLEX SUPPORT:

N/A

ON-COMPLEX SUPPORT:

IBM QUAL ASSURANCE IBM MECHANICAL

7. OTHER APPLICABLE REFERENCE DOCUMENTATION

30Z13109 7910574 30Z13112 30Z13104

7921601 .

IS ITEM CONTINUATION

& TEST OBJECTIVES

1. TO INSTALL OR REMOVE THE FOLLOWING COMPONENTS:

LVDA, LVDC, ST-124 PLATFORM, FCC, BATTERIES, POWER DISTRIBUTOR, PLATFORM ELECTRONIC ASSY.

S TEST CELLA PTION EQUIPMENT STATUS CONFIGURATION

THIS TEST DOES XX DOES NOT CONTAIN HAZARDOUS OPERATIONS.

COMPOSENTS ARE TRANSPORTED TO THE IU ON THEIR HANDLING FIXTURES. COOLANT CAVITIES OF INDIVIDUALLY COOLED COMPONENTS ARE FILLED WITH COOLANT FROM THE GSCU (IF THE IU TCS IS IN CLOSED LOOP CONFIGURATION) AND TRANSFERED TO THE COPPORENT HANDLING EQUIPMENT HOIST IN THE IU. THE COMPONENT IS POSITIONED ALD MODITING HARDWARE IS INSTALLED AND TORQUED. ADDITIONAL CONNECTIONS ARE COMPLETED, AND THE HOIST IS REMOVED FROM THE IU.

REMOVAL IS ACCOMPLISHED BY REVERSING THE PROCEDURE.

CONFIGURATION: VEHICLE STACKED.

PHASE: III, IV, V, VI

TEST REQUIREMENTS

MSFC: 7921601 0.3.3.1.1 0.3.5.2.6.1.4

					and the second s
I	8/09/4	PEVISED BLO	CKS 3, 4, 5 & 17	OX. Riby	Thank
н	6/13/73	PEVISE MSFC	REQUIREMENTS	G.E. LECKIE	P. SCHMID
G	14/19/72	REVISED BLO	CKS 3, 4, 5, 16 & 17	G.E. LECKIE	P. SCHMID
F	3/15/71	PETISE MSFC	REQUIREMENTS	G.E. LECKIE	P. SCHMID
E	[6/4/71]	CHA: GE PPER	IX FROM "IV" TO "V"	G.E. LECKIE	P. SCHMID
D	16/3/70	REVISE MSFC	REQUIREMENT REF RSCC 53	D.E. SCHMIDT	P. SCHMID
С	11/7/70	PE /ISE EFFE	CTIVITY & BLOCK 5	J.C. PEURRUNG	P. SCHMID
8	11/24/9	CHAIGE BLOC	K 4	J.C. PEURRUNG	P. SCHMID
A	1/19/8	UPDATE BLOC	KS 4 AND 17	S/J. HANSEN	5/P. SCHMID
& ZEV.	DATE		REASON	Contractor Approval	KSC Approval
	S/W.B. HUNT		BM - 906	9. DATE 29 SEPTEMBER 1	967.
S/P.W. SCHAID			JD-25	6 OCTOBER 1967	

Commence of the contract of the

1401 - 37 -ATTLE PATURE TEST AND OFERATIONS CATALOG (SHEET 2) I. TEST TITLE ASC TEST NUMBER V-34047 IU HEAVY COMPONENT INSTALLATION AND REMOVAL EFFECTIVITY AS-206 & SUBS Id. LOCATION 14. COMPUTER PHOC. INDENTIFICATION S EST. TEST TIME LC 39A, B, C 4 MEN - 16 HOURS 16 SUPPORT REQUIREMENTS INTERSTAGE REQUIREMENTS: N/A OFF-COMPLEX SUPPORT: N/A ON-COMPLEX SUPPORT: IBM MECHANICAL IBM IU VEHICLE NETWORKS IBM QUAL. ASSURANCE 7. OTHER APPLICABLE REFERENCE DOCUMENTATION MSFC-MAN-008 V-31108 MSFC-SPEC-164 7921601 MSFC-SPEC-195 S. ITEM CONTINUATION

KSC OPERATIONS APOLLO/SATURN TEST AND OPERATIONS CATALOG SHEET	PAGE _1_ OF _2_	APOLLO/SATURN TEST AND OPERATIONS CATALOG (SHEET 2)
ST TITLE	2. KSC TEST NUMBER	I TE T TITLE
	V-34048	A TUATOR HOLDING FIXTURE, INSTALLATION & REMOVAL
TUATOR HOLDING FIXTURE - INSTALLATION & REMOVAL	a. EFFECTIVITY As Required	
ST OBJECTIVES	AS Required	13. CATION 14. COMPUTER PROC. INDENTIFICATION
[4] [1] [1] [1] [1] [1] [1] [1] [1] [1] [1		LC 34/37, VAB N/A
ecifies the instructions for installing and removing the act the holding fixture provides the means for supporting the act center and allows the actuator to be cycled full stroke as	tuators, holds the engine	Rccketdyne personnel
ST DESCRIPTION EQUIPMENT STATUS/CONFIGURATION		
HIS TEST DOES DOES NOT CONTAIN HAZARDOUS OPERATIONS.		
est Description Olding Fixture Installation:		
Removes engine struts from area of pitch actuator. Disconnects pitch & yaw actuators from attach points.		17. STHER APPLICABLE REFERENCE DOCUMENTATION
Installs holding fixture Attach actuators to holding fixtures		1161632 Actuator Holding Fixture, Instl. & Removal
olding Fixture Removal:		16. ITEM CONTINUATION .
. Detaches actuator from the holding fixture		
Removes holding fixture		
Installs actuator to the flight configuration		
Reinstalls engine struts to the flight configuration	distribution and the straight of the straight	
quipment Status		
Aft Interstage Access installed		
DSV-4B-474 Fixture, Engine Actuator Support Kit		
est Configuration . The stage shall be vertical.		
. In stage size of		
	REQUIREMENTS None	
3/8/71 Revised KSC Test No. V-30348, was O-IV-34048	R. O. English hillsmilling	
Change Effectivity to "As Req'd". Holding Fixt 5/25/69 Insti. no longer req'd during normal test seque	nce flessufine itan fan	
EV. DATE REASON	Contractor Approval KSC Approval	
	DATE	
1. J. Plomer/s DAC/FTC	10/2/67	
0. 1201101/0	APPROVAL DATE	
W. G. Mahoney/s LV-MEC-24	10/20/67	

KSC ECOU 73.338 17:871

PAGE 2 OF 2

2. KSC TEST NUMBER
V-34048
3. EFFECTIVITY
AS Required
15. EST. TEST TIME
8 Hrs

1.34 . YT. . NIL 1, 1 - 311000 PAGE 1 OF 2 KSC OPERATIONS APOLLO/SATURN TEST AND OPERATIONS CATALOG SHEET KSC TEST NUMBER TEST TITLE V-34052 PREPARATION FOR USE OF GEARCASE PRESSURE, CONTROL SYSTEM PRESSURE, AND HYDRAULIC PRECHARGE PRESSURE MONITOR GAGES S EFFECTIVITY 206 AND SUBS 4 TEST OBJECTIVES CHECKOUT CONTROL SPHERE HIGH PRESSURE MONITOR GAGE. (0-3000 PSIG) CHECKOUT 750 PSIG CONTROL PRESSURE MONITOR GAGE. 2) CHECKOUT GEARCASE PRESSURE MONITOR GAGES (0-15 PSIG, 8 EACH) 3) CHECKOUT HYDRAULIC PRECHARGE MONITOR GAGE. (0-3000 PSIG) 5 TEST DESCRIPTION EQUIPMENT STATUS CONFIGURATION DOES NOT CONTAIN HAZARDOUS OPERATIONS. THIS TEST TOOES THE PNEUMATIC TEST PANELS AND MONITOR GAGES ARE SET UP IN A SAFE, CONVENIENT LOCATION ON THE LAUNCH PEDESTAL. A 0-3000 PSIG PNEUMATIC TEST PANEL (LOX SERVICE) IS CONNECTED TO THE 0-3000 PSIG GAGE IN THE CONTROL SYSTEM PRESSURE MONITOR PANEL. TEST PANEL AND MONITOR GAGE INCREASING AND DECREASING PRESSURE IS RECORDED IN 500 PSI INCREMENTS (0-3000 PSIG) THE CONTROL SPHERE MONITOR GAGE MUST READ WITHIN 25 PSIG OF THE CALIBRATED GAGE. THE TEST SETUP IS SECURED AS REQUIRED, AND ALL LINES AND FITTINGS SEALED TO MAINTAIN CLEANLINESS. THE MONITOR GAGE IS THEN READY FOR USE. A 0-1000 PSIG PNEUMATIC TEST PANEL (LOX SERVICE) IS CONNECTED TO THE 0-800 PSIG GAGE IN THE CONTROL SYSTEM MONITOR PANEL. TEST PANEL AND MONITOR GAGE INCREASING AND DECREASING PRESSURES ARE RECORDED IN 100 PSI INCREMENTS. (0-800 PSIG) THE 750 PSIG CONTROL PRESSURE MONITOR GAGE MUST READ WITHIN 10 PSIG OF THE CALIBRATED GAGE. THE TEST SETUP IS DISMANTLED AS REQUIRED, AND ALL LINES AND FITTINGS SEALED TO MAINTAIN CLEANLINESS. THE MONITOR GAGE IS THEN READY FOR USE. A 0-25 PSIG PNEUMATIC TEST PANEL (FUEL SERVICE) IS CONNECTED TO THE 0-15 PSIG GEARCASE PRESSURE MONITOR GAGES. TEST PANEL AND MONITOR GAGE INCREASING AND DECREASING PRESSURE IS RECORDED IN 2 PSI INCREMENTS (0-15 PSIG). MONITOR GAGES ARE REDLINES AT 2 AND 10 PSIG. THE TEST SETUP IS DISMANTLED AS REQUIRED. ALL LINES AND FITTINGS ARE SEALED TO MAINTAIN CLEANLINESS. THE MONITOR GAGE IS THEN READY FOR USE. CLASSIFIED HAZARDOUS BY SYSTEMS SAFETY 7/21/72 NON-HAZARDOUS PER KMI. 1710.13A/SF 2/28/72 Contractor Approval | KSC Approval REASON 6. REV. DATE S. ORGANIZATION CONTRACTOR APPROVAL 9/22/7/ CCSD 12. APPROVAL DATE

11. ORGANIZATION

LV MEC 23

10/28/71

10 MASA KSC APPROVAL

#SC FORM 23,338 (1/81

APOLLO/S	ATURN TEST AND OPERATIONS CATALOG (SHEET 2)	PAGE 2 OF 2
PREPARATION F	OR USE OF GEARCASE PRESSURE, CONTROL SYSTEM	2. KSC TEST NUMBER V-34052
13 LOCATION	THORACLIC PRECHARGE PRESSURE MUNITUR GAGES	206 AND SUBS
VAB	N/A	4 HOURS
H. P. GAS		
	N 4	

18 ITEM CONTINUATION

HOME

ITEM #5 VEHICLE CONFIGURATION - N/A

7 OTHER APPLICABLE REFERENCE DOCUMENTATION

TEST REQUIREMENTS MSFC: N/A

PHASE N/A

ITEM #5

A 0-3000 PSIG PNEUMATIC TEST PANEL (FUEL SERVICE) IS CONNECTED TO THE HYDRAULI PRECHARGE MONITOR GAGE. TEST PANEL AND MONITOR GAGE INCREASING AND DECREASING PRESSURES ARE RECORDED IN 500 PSI INCREMENTS. THE HYDRAULIC PRECHARGE MONITOR GAGE IS MARKED FOR EASY IDENTIFICATION. THE TEST SETUP IS DISMANTLED AS REQUI AND ALL LINES AND FITTINGS SEALED TO MAINTAIN CLEANLINESS. THE MONITOR GAGE IS . THEN READY FOR USE.

APOLLO SATURN TEST AL	OPERATIONS CATALOG SHEET	PAGE 1 OF 2
MODEL VI GROUND HYDRAULI	C SERVICER FUNCTIONAL CHECKO	
AND PREPARATION TEST. (STAND BY)	AS REQUIRED
1) FUNCTIONAL CHECKOUT 2) EASURE CLEANLINESS O	OF THE GROUND HYDRAULIC SERV F HYDRAULIC FLU.D IN THE GRO IC SERVICER FOR LEAKS.	ICER. UND HYDRAULIC SERVICER
TO TELL DE PTICH EQUIPMENT STATUS C	ONFIGURATION	
THIS TEST COES TOOKS	IOT CONTAIN HAZARDOUS OPERATIONS.	fra de la Parece
FOR LEAKAGE AND FUNCTION LINES. HYDRAULIC FLUID UNIT SYSTEM VALVES AND F FLETION OF THE PURGE, FL	VICER, SUPPLY, AND RETURN FL AL OPERATION OF COMPONENTS, IS.CIRCULATED THROUGH ALL TH ILTERS TO PURGE AND CLEAN TH UID SÁMPLES ARE OBTAINED AND FOR USE IN FLIGHT HYDRAULIC	CONNECTIONS AND HE HYDRAULIC SERVICER HE SYSTEM. AT COM- D ANALYZED TO ENSURE
THE FLUID IS ACCEPTABLE	FUR USE IN FLIGHT HYDRAULIC	(313) EM3. (4.74.)
	500 148 153	
		REQUIREMENTS
paise w/A	MSFC:	N/A
	UMENTATION REQUIREMENTS	20 Cat 1/2/2/2 12 2/47
2 3/29/72 NON-HAZAPDOUS P	Market and the second of the s	L'N 4/1 RYWALT
6 REV. DATE	REASON	Contractor Approval KSC Approval
FIRE	8. ORGANIZATION 9. D	
15 Maja esc APPROVAL	11. ORGANIZATION 12.	10/28/71

APOLLO SATURN TEST AND OPERATIONS CATALOG (SHEET 2)	PAGE	2 0+2	
MODEL VI GROUND HYDRAULIC SERVICER FUNCTIONAL CHECK- OUT AND PREPARATION TEST. (STANDBY)		V-34053	
		REQUIRED	
VAB or PAD N/A	5 H		
16 SUPPORT REQUIREMENTS	1.4.4		
1) A. H. P. GAS			
2) ELECTRICAL POWER (440 V, 60 CYCLE, 3 PHASE) 3) INDUSTRIAL WATER			
S) ANDOSTRIAL WATER			
	•		
17 OTHER APPLICABLE REFERENCE DOCUMENTATION			
MSFC SPECIFICATIONS 1660, 20085076			
18. ITEM CONTINUATION			
to the first the factor of the first			
		•	
		Control of the second	
그는 그렇다니 그런 사람이 반하고 말을 받아 네 만나다.			

4 TEST CBJECT VES

TO PRESSURIZE THE PILEUMATIC CONSOLE FOR MANUAL OPERATIONS, ST-124 GN₂ PURGE, FISH PRESSURE REGULATOR SET UP (POWER ON), SETUP FOR REMOTE OPERATION, AND TO SECURE THE PREUMATIC CONSOLE AFTER MANUAL OR REMOTE OPERATIONS.

TEST DESCRIPTION EQUIPMENT STATUS CONFIGURATION

THIS TEST DOES X DOES NOT CONTAIN HAZARDOUS OPERATIONS.

THE PREUMATIC CONSOLE IS PRESSURIZED MANUALLY TO PROVIDE PNEUMATIC CONSOLE SUPPORT.

SECURING IS ACCOMPLISHED BY VENTING GN2 FROM CONSOLE.

SOMFIGURATION: INSTALLED ON LUT WITH HP GN2 APPLIED.

PHASE: II, III, IV, V, VI

TEST REQUIREMENTS

MSFC: N/A

	PAUL SCHM		11 OFGANIZATION	OCTOBER 9, 1	967
,	7445708 APR		S. ORGANIZATION IEM - M71	OCTOBER 4, 19	1
	CATE		REASON	Contractor Approv	al KSC Approval
4	5:/24/8	TO CHANGE	BLOCKS 4 AND 5	S/J. H. HANSE	EN S/P.W. SCHMI
5	75/7/3	WOOTEN BLOC	CK 5	S/J. H. HANSE	EN S/P.W.SCHMID
0	27/3/3	CHANGE FROM	1 HAZARDOUS TO NON-HAZÁRDOU		
D	-/15/65	CHANGE TO T	TEST OBJECTIVES, BLOCK 4	1/1 83 104.	in J. What
Ε			K FROM "IV" TO "V" & BLOCK	15 SE Luchi	G. b. J. Ling
F	-/7/72	REVISED BLOC	KS 3, 5, 13 AND 16	GE Lochic 4	John Phishind
Ġ	7/22/74	REVISED BLO	CKS 3 & 17	D7.60	1 Solut

PAGE _ 2 OF 2 APOLLO SATURN TEST AND OPERATIONS CATALOG (SHEET 2) NSC TEST NUMBER 1 TEST TITLE V-3603S AS-209 & SUBS IU PNEUMATIC CONSOLE SET UP 15 EST TEST TIME 14 CONFUTER PROC INCENTIFICATION 1 MAN - 1.5 HR TOTAL N/A LC 39 16 SUPPORT REQUIREMENTS INTERSTAGE: N/A OFF COMPLEX: N/A ON COMPLEX: IBM QA RD 4290 RD 40092 RD 40093 IBM MECHANICAL PENER APPERABLE REFERENCE DOCUMENTATION MSFC-MAN-014 1 - ITEM CONTINUATION

KSC OPERATIONS
APOLLO SATURN TEST AND OPERATIONS CATALOG SHEET PAGE 1 . OF 2 V-36946 IU UMBILICA: MOUSING INSTALLATION AND REMOVAL AS-206 & SUBS 4 TEST OBJECTIVES PREPARE THE TU UNBILLICAL PROUSTING FOR INSTALLATION AND INSTALL ON THE VEHICLE. REMOVAL OF HOUSING FROM UMBILICAL CARRIER. S TEST DESCRIPTION EQUIPMENT STATUS CONFIGURATION THIS TEST TODES XX DOES NOT CONTAIN HATARDOUS OPERATIONS. THIS OPERATION IS DIVIDED INTO TWO PARTS. 1. THE IU UMBILICAL HOUSING IS PREPARED FOR INSTALLATION AND INSTALLED ON THE VEHICLE. 2. THE IU JMBILICAL HOUSING IS PREPARED FOR REINSTALLATION OR REMOVED FROM THE UNBILICAL CARRIER SUPPORTS. VEHICLE STACKED. CONFIGURATION: TEST REQUIREMENTS: PHASE: II, III MSFC: N/A 1 8/27/74 REVISED BLOCKS 3, 4, 5 AD 17 4/7/72 PEVISED BLOCKS 3, 4, 5, M.D. 16 A 2-12-9 PEVISED BLOCKS 1,4, AND 5 6 REV. DATE Contractor Approval | KSC Approval CONTRACTOR APPROVAL S UNDANIZAT ... S/ W.B. HUNT 18M K73 29 SEPTEMBER 1967 IS NASA PER APPRILLA 12 APPROVAL DATE 11 January 1.4 1.54

S/ PAUL SCHMID

APOLLO SATURN TES	T AND OPERATIONS CATALOG (SHEET 2)	PAGE 2 07 2
IU UMBILICAL HO	DUSING INSTALLATION AND REMOVAL	V-36846 SEPTENTINE
VAB	TEN PROC. INCENTIFICATION	2 MEN - 8 HOURS
SUPPORT REQUIREMENTS		
INTERSTAGE:	S-IVB MECHANICAL, BOEING S/A	
OFF-COMPLEX:	N/A	
ON-COMPLEX:	IBM QA IU VEHICLE NETWORKS IBM MECHANICAL	
THER APPLICABLE REFERENCE	DOCUMENTATION	
ABMA-STD-18	75M 21452 MC-245	
MSFC-MAN-010	75M 24737	381
	75M 24737	
TEM CONTINUATION	75M 24737	
TEM CONTINUATION	75M 24737	

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THE PERSON NAMED IN

Tarket.

4 TEST OBJECTIVES

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3

TO INSTALL AND REMOVE THE IU UPPER PROTECTION RING, GUIDE PIN BRACKETS, AND THE PROTECTIVE COVER.

5. TEST DESCRIPTION EQUIPMENT STATUS CONFIGURATION

THIS TEST XX DOES

DOES NOT CONTAIN HAZARDOUS OPERATIONS.

THIS PROCEDURE CONSISTS OF THREE PARTS.

PART I: UPPER PROTECTIVE RING INSTALLATION OR REMOVAL.

1. INSTALLATION: THE TRANSPORTER AND UPPER PROTECTIVE RING ARE TRANSPORTED TO THE HOISTING AREA. THE HOISTING TOOL IS ATTACHED TO THE UPPER PROTECTIVE RING AND HOISTED TO THE IU. THE UPPER PROTECTIVE RING IS MATED TO THE IU.

THE TRANSPORTER IS MOVED TO THE HOISTING AREA. THE HOISTING TOOL IS ATTACHED TO THE UPPER PROTECTIVE RING. THE UPPER PROTECTIVE RING IS DEMATED FROM THE IU AND SECURED TO THE TRANSPORTER.

PART II: GUIDE PIN BRACKETS INSTALLATION OR REMOVAL.

PART III: IU PROTECTIVE COVER INSTALLATION OR REMOVAL.

1. INSTALLATION:

THE PROTECTIVE COVER IS LIFTED FROM THE 15TH FLOOR STORAGE PLATFORM, POSITIONED AND ATTACHED TO THE IU.

2. REMOVAL:

THE PROTECTIVE COVER IS REMOVED FROM THE IU AND PLACED ON THE 15TH FLOOR STORAGE PLATFORM.

CONFIGURATION:

IU ERECTED ON S-IVB.

TEST REQUIREMENTS MSFC: N/A

PHASE: II

SEE REV. LEVEL HISTORY IN BLOCK 18 CONTIN. 14/11/61 COMPLETE REVISION TO COMBINE TESTS a 112-16-B Lice briller Contractor Approva KSC Approval 6. REV. DATE REASON CONTRACTOR APPROVAL 8 ORGANIZATION 9 DATE 28 SEPTEMBER 1967 S/ W.B. HUNT IBM K73

12. APPROVAL DATE 10 NASA-KSC APPROVAL 11. ORGANIZATION 10-2-67 S/ PAUL W. SCHMID JD-25

KSC FORM 23-338 (7:67)

APOLLO/SATURN TEST AND OPERATIONS CATALOG (SHEET 2) KAC TEST NUMBER UPPER PROTECTIVE RING, GUIDE PIN BRACKETS, AND IU V-36048 PROTECTIVE COVER INSTALLATION AND REMOVAL. 3. EFFECTIVITYSL-206 & SUBS AND AS-206 & SUBS 14. COMPUTER PROC. INDENTIFICATION 16. EST, TEST TIME LC 39 4 MEN - 16 HOURS N/A

16 SUPPORT REQUIREMENTS

INTERSTAGE:

S-IVB MECHANICAL

OFF-COMPLEX:

SUPPORT CONTRACTOR SHOPS

ON-COMPLEX:

IBM OA KSC SAFETY SECURITY SWING ARMS

PLATFORMS 750/75 TON CRANE

IBM MECHANICAL

17. OTHER APPLICABLE REFERENCE DOCUMENTATION

· HT-322-13000

TM-SE700068

K-V-053 MGSE-D-604

18. ITEM CONTINUATION

BLOCK 6-REVISION HISTORY (CONTINUED FROM PAGE 1)

REV. DATE REASON 4/7/72 REVISED BLKS 3, 5, AND 16 COLITR. APPRVL KSC APPRVL

KSC OPERATIONS
APOLLO SATURN TEST AND OPERATIONS CATALOG SHEET PAGE _1_OF _2_ KSC TEST NUMBER TAIL SERVICE MAST SUPPORT OPERATIONS FOR LSE VAB AND PAD V-36111 ELECTRO-MECHANICAL SYSTEMS TESTS · EFFECTIVITY' CSE A TEST OBJECTIVES To define operations required as preparations for and securing from LSE VAB AND PAD --ELECTRO-MECHANICAL SYSTEMS TESTS. THIS TEST __ DOES [X] DOES NOT CONTAIN HAZARDOUS OPERATIONS. Classification: Subtask Prime Test Organization: Service Arm Systems This test verifies the firing circuits to HRV #1 and HRV #2 are satisfactory to support launch. Normal operating pressure will be used to operate these valves. 6. REV. DATE REASON KSC Approval Contractor Approval BATC 5-8521/5-8552 8/27/68 IZ AHMILINAL LATE I.V-MF.C-12

767		
APOLLO SATURN TEST AND OPERATIONS CATALOG (SHEET 2)	PASE 2 OF 2	
TAIL SERVICE MAST SUPPORT OPERATIONS FOR USE VAB AND PAD	V-Jolli * EFFECTIVITY GSE	
ELECTRO-MECHANICAL SYSTEMS TESTS		
VAB & PAD	8 HRS.	
N 5. PROPE REQUIREMENTS		
Ref: RD 40009	•	
7 OTHER APPLICABLE REFERENCE DOCUMENTATION U-20052		

IR. ITEM CONTINUATION

V-20055

A TEST CBIECTIVES

TO VERIFY THE OPERATIONAL STATUS OF THE TCE STAGE MODULE AND ESTABLISH A BASELINE CONFIGURATION OF PATCHING AND ADJUSTMENT IN PREPARATION FOR TEST SUPPORT.

S TEST DESCRIPTION EQUIPMENT STATUS CONFIGURATION

THIS TEST COES XX DOES NOT CONTAIN HAZARDOUS OPERATIONS.

The RF signal generator is functionally checked and the deviation meter accuracy is verified at two points by the carrier null method. The FM test oscillator is checked for carrier deviation levels using the deviation meter. Discriminator input levels are measured by a DVM and are recorded for references utilizing the Test Oscillator and RF signal generator as inputs to the GF | Receiver. During VAB OPS the 450 KHZ Demod output is set to establish discriminator input level reference. The receivers are checked for correct control settings and functional operation. The Oscilloscope and frequency counter are verified functionally.

The 600 KHZ Demod is functionally tested using the PCM simulator as a 600 KHZ source. Correct display of a digital word through the S-IB Decom is verified utilizing the 16 channel D/A converter. The two 8-channel brush recorders are functionally verified by utilizing station calibration levels.

Patching is configured for test support.

Vehitle configuration is not applicable.

Test Requirements MSFC - N/A KSC - N/A

	A 8-25-74 To conform w	ith TCE Relocation to CIF	o sotoin Kland
1	6 PEV DATE	REASON	Contractor Approval KSC Approval
-	7 CONTRACTOR APPLITUA	9 ORGANIZATION	9. DATE
-	J.R. Howard	CCSD	12-7-71
	10 HASA-KSC APPROVAL	11. ORGANIZATION	12. APPROVAL DATE
	L.C. Blanchard	LV-INS-12	12-10-71

APOLLO SATURN TEST AND OPERATIONS CATALOG (SHEET 2)	PACE _2 OF _2
) TEST TITLE	2 486 1687 MUMBER
TOTE STAGE MODULE PRETEST PREPARATIONS	V-38010
	206 & Subs. LC-35
13 LOCATIONCIF/TCE 14 COMPUTER PHOC. INDENTIFICATION	IS EST TAST TIME.
(291 & 2P12) N/A	4 hours
IS SUPPORT REQUIREMENTS	

CIF/TCE (291 & 2P12)

17. OTHER APPLICABLE REFERENCE DOCUMENTATION
Operations and maintenance telemetry checkout equipment
Vendors Manuals for Installed Test Equipment
CIF/TCE (291 - 2Pl2) System Drawings

18. ITEM CONTINUATION

4

- KSC FORM 22-338 (7/6/)

KSC OPERATIONS PAGE 1 of 2 APOLLO SATURN TEST AND OPERATIONS CATALOG SHEET PSC-TEST HUMBER V-38011 RF AND TELEMETRY PLUGS OUT OAT EFFECTIVITY PREPARATIONS AND SECURING 206 & Subs LC-39

TO PROVIDE A PATH FOR UNINTERRUPTED SIGNAL FLOW TO AND FROM THE RF AND TELEMETRY EQUIPMENT DURING PLUGS OUT OAT. THIS IS PROVIDED BY INSTALLATION AND SUBSEQUENT REMOVAL OF THE RF AND TELEMETRY OAT CABLE.

7415 11 ST X DOLS NOT CONTAIN HAP ARDOUS OPERATIONS.

The RF and Telemetry OAT Cable is installed between the VAB Level C bulkhead connector and RF/TM systems located in Unit 13 of the SIB Stage. Connections are made to the DRSC power divider, DRSC Decoders 1 and 2, Telemetry PCM/DDAS Assembly and the Telemetry RF Coupler. This provides RF command input to the DRSC system, Audio outputs from both decoders, 600 KHZ DDAS output for the PCM/DDAS and RF output from the telemetry systems. After SIB Stage power application, reception of the 600 KHZ DDAS signal is verified at the TCE.

After completion of the swing arm test, the RF/TM OAT cable is removed and the Airborne systems configuration is restored.

The vehicle must be in VAB High Bay 1.

THE TOP SHIPTION POINTAIN OF STATISTICS OF THE HEISTATION

TEST REQUIREMENTS MSFC - N/A KSC - N/A

		Contractor Approval KSC Approval
	- English Cosp.	CAPTURINAL TRAIT
-	Wingdi / V / Vo-1/ LV-INS-12	72 10 71

AFOLLO SATURN TEST AND OPERATIONS CATALOG (SHEET 2)	PAGE _2 61
RF AND TELEMETRY PLUGS OUT OAT	V-38011
PREPARATIONS AND SECURING	206 & Subs LC-39
LOCAT IN 14 COMPUTER PROC. INDENTIFICATION N/A	2 Hours

- 1. Access to Unit 13
- 2. Access to M. L. Distributor 9020

7 OTHER APPLICABLE REFERENCE DOCUMENTATION Skylab II, III, IV RF & TM Cables, Drawings No. LV-INS-12-2 TM System Functional Drawing 77K09178

PAGE DISTRIBUTION
TEST NO. GP-592
VEHICLE SAT V/IB

DATE:

OCTOBER 4, 1974 32

KENNEDY SPACE CENT	<u>rer</u>	MARSHALL SPACE FLIGHT CENTER
BUCHANAN, D.D. PARSONS, W. COONCE, J.M. FIKE, J.W. LIBRARY ARBIC, R.G. KECK,J.E. MEDLOCK, J.R. LEALMAN, R.E. CHAMBERS, M CHANDLER, W.O. WHITESIDE, C.A. HUFFMAN, B. FITZGERALD, J.J. O*HARA, A. MARIANI, T. HORNE, C.V.	DD 1 1 1 1 1 1 1 1 1	SAT-A SAT-C RAINS SAT-E BARNES SAT-SE FERRELL SAT-IU/GSE GALEY SAT-SII/IVB LAHATTE S&E AERO-P S&E ASTN-SO SELLS S&E ASTR-SS JOHNSON S&E ASTR-ST S&E QUAL-PC COVINGTON S&E S/P-EH KEYES RAINS RAINS RAINS RAINS RAINS RAINS RAINS RAINS REPRELL RAINS RAINS REPRELL RAINS RAINS REPRELL RAINS RAINS REPRELL RAINS
BISHOP, E. THARPE, R.C.	TS-NTS-1 1 TS-OSM 1	NATIONAL AERONAUTICS & SPACE ADMINISTRATION WASHINGTON, D.C. 20546 ATTN: J. SPERRY, MLE (2)
GELZER, J.R. HAYES, W.W. NICHOLS, H. ANDERSON, B.C. BOYETTE, M. WEINBERG, D.B.	CHRY-16/VAB 15B10 15 IBM-922/VAB 2N11 12 MDAC/VAB 3L4 5 ROC-2/VAB 3N9 2 BOFM-49/VAB 3N1 15 BOFM-35/VAB 2L3 5 PLUS ORIGINALS & EXTRAS	NASA SCIENTIFIC & TECHNICAL INFORMATION FACILITY P.O. BOX 33 COLLEGE PARK, MARYLAND 20740 (1)

NASA/PAFB JUN/72